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POPULAR COMMUNICATIONS

OCTOBER 1988 $2.50
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- Saga of Radio Free America
- Contra Shortwave Connection

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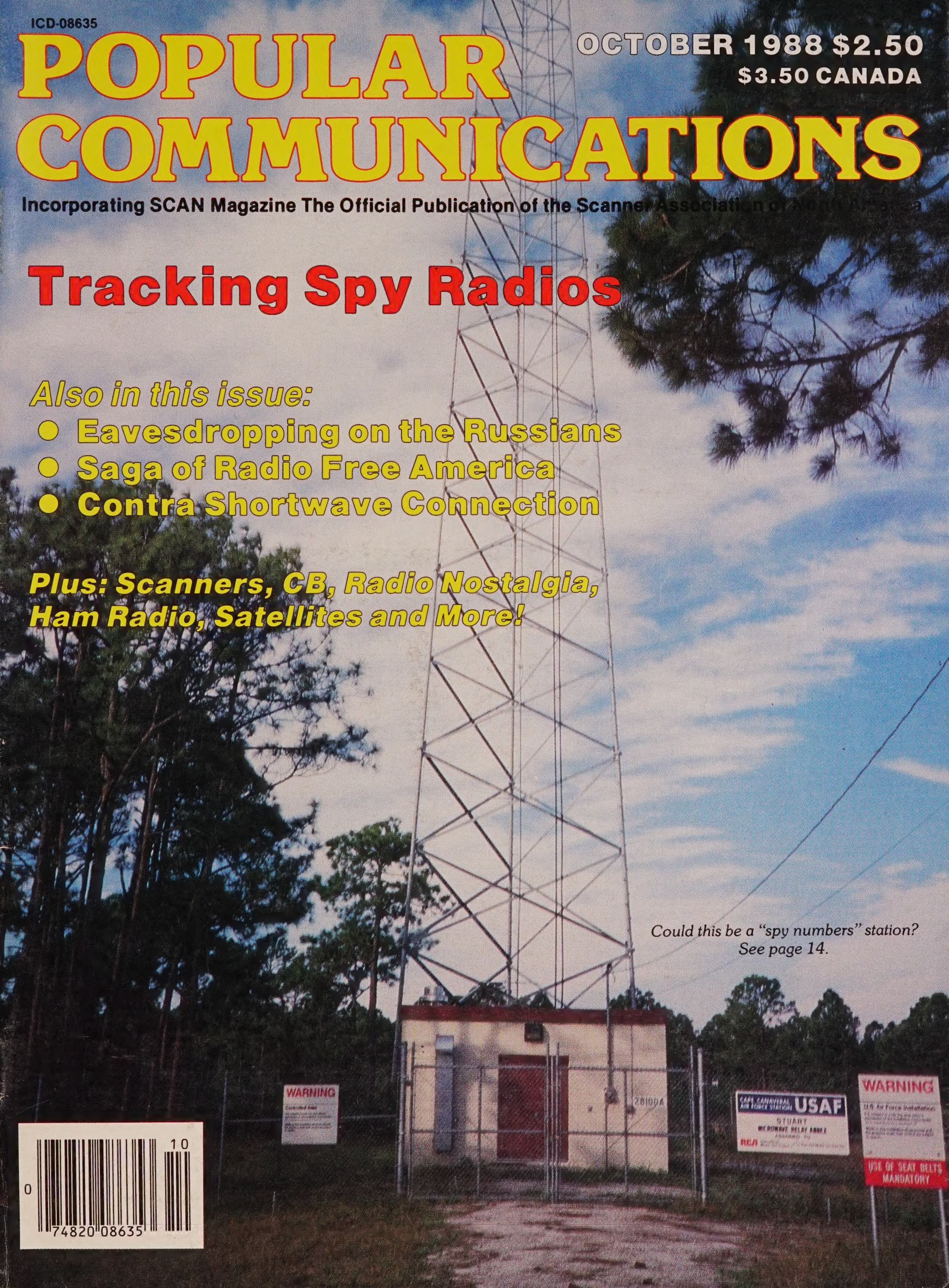
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STUART
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WARNING
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USE OF SEAT BELTS MANDATORY

Could this be a "spy numbers" station? See page 14.

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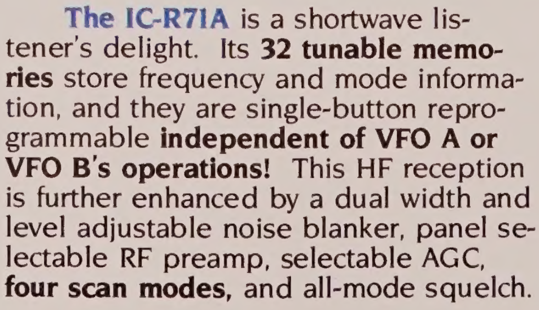

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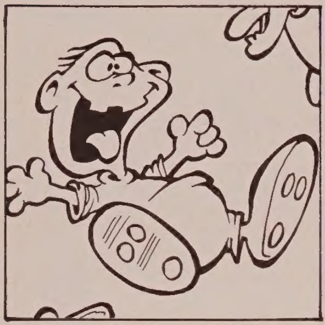

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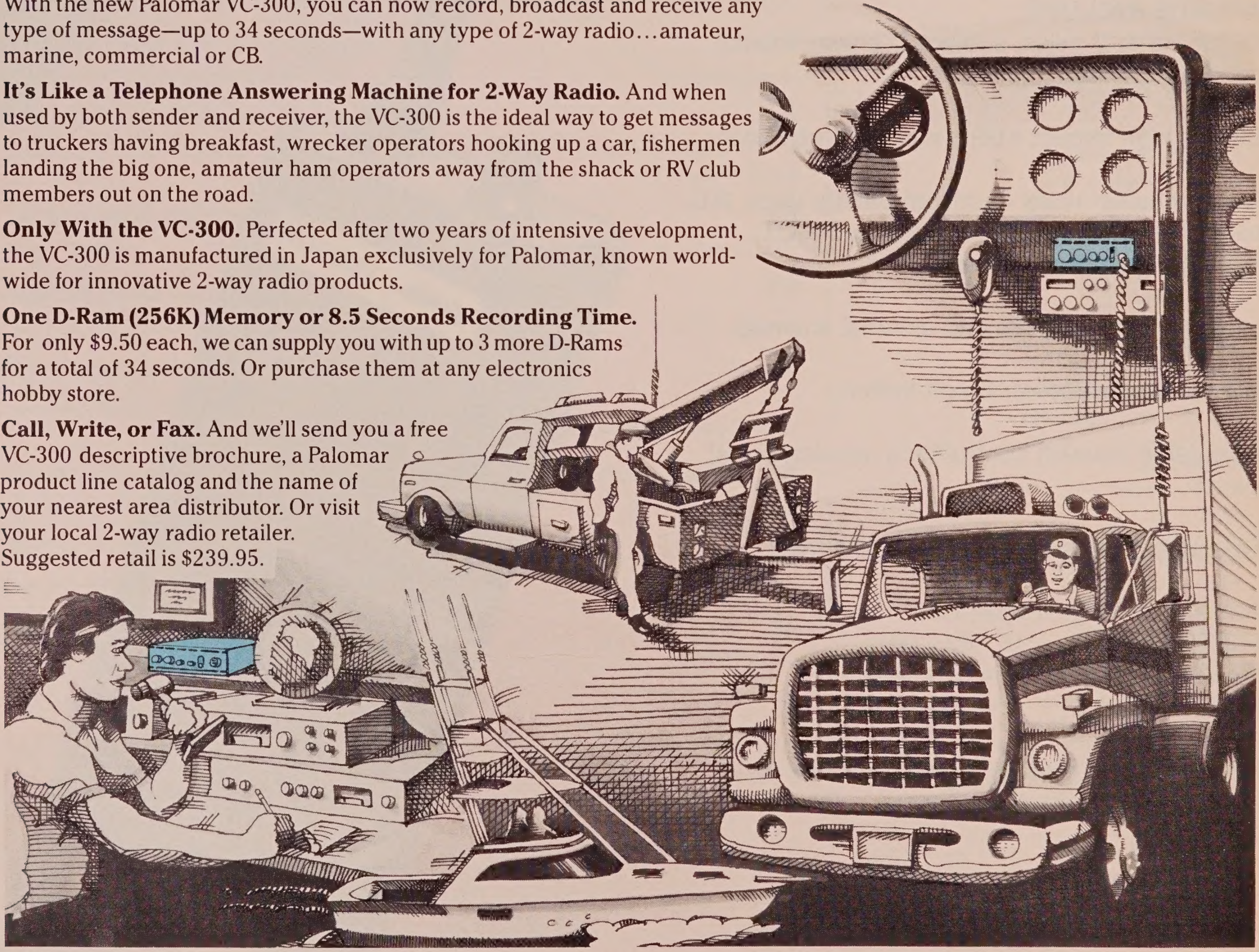

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BEAMING IN

BY TOM KNEITEL, K2AES

AN EDITORIAL

The Day I Was A TV Executive . . . Almost!

You work in and around a certain field for a long time and you eventually may come to the conclusion that maybe you could do things better than those who are in charge. For people like Lee Iacocca, Pat Weaver, Malcom Forbes, and Hugh Hefner, that was a great notion. But it doesn't always work out that way, especially in the area of communications.

One day, while scanning through *Broadcasting* magazine, I spotted an item that made me think that my chance was at hand. It said that someone was planning on building a commercial TV station almost in my back yard. It was to be the first TV station anywhere in my county. Plans were for it to be on TV Channel 67, and spreading a powerful signal over a rapidly growing surburban market. The fellow planning the station was Theodore Granik, a man with an excellent background in TV programs going back to the early 1950's.

Wouldn't it be wonderful, I thought, to be somehow involved in such a station. Even to own a few shares of stock in such a prestigious enterprise would be something to brag about to my pals. I promptly wrote to Granik and told him that as a resident of his planned station's primary coverage area, I'd like to be kept in mind when he started selling stock in the station.

It didn't take long for me to get a response. A call from Granik's secretary invited me to a private Sunday brunch meeting with Granik at his residence. The address was on New York City's posh Park Avenue. I was most definitely impressed. Obviously, I'd have to find my necktie.

The tie turned out to be a good idea, for Granik was a dapper and distinguished looking gent, my fantasy image of an important TV executive; an imposing presence, with a head full of well-trimmed silver hair. As he welcomed me to his luxurious apartment, I immediately noticed the handsome maroon velvet dressing gown with the satin collar he was wearing over his oxford blue shirt and white necktie. Did people actually dress this way at home in the morning?

And did people really have brunch like this at home? Uniformed servants laid out an assortment of hot plates containing scrambled eggs, hash browns, smoked kippers, bacon, ham, steak, sausages, rolls, pancakes, and toast, plus jellies, juices, and stuff I didn't even get to taste. I decided that this was a lifestyle I could probably force myself to tolerate.

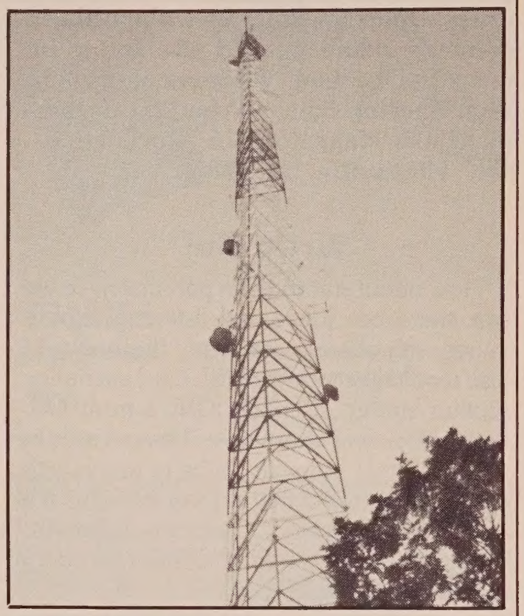
After some leisurely chit-chat over this feast, we retired to the den for coffee and business talk. He took out a brushed metal attache case and began to withdraw stacks of reports in red, blue, green, and gold jackets. These were financial projections, programming ideas, cost estimates, equipment evaluations, blueprints for the executive offices, correspondence with attorneys as well as with the FCC and SEC, and many letters from zoning boards and other state, county, and local agencies. There were multitudes of FCC forms in triplicate, reports from consulting engineers, blueprints, contour maps, catalogs from program syndicators, equipment flyers, audience demographics, and numerous reports, Obviously much research, planning and hard work had already taken place before I appeared on the scene.

Granik explained that when I had mentioned that I lived near the station, he felt that I'd be worth contacting. Seems that the FCC, in considering broadcast license applications, looks very kindly upon those that indicate active involvement by local yokels. This, as opposed to applications submitted by out-of-area attorneys, corporations, investors, speculators and other robber barons who have no actual connection or contact with the people living in the area proposed to be served by their station.

He observed that so long as I wanted to invest in his station, maybe I'd even consider being on the station's Board of Directors. As I looked over the blueprints, I spotted a corner office suite with large windows that would suit me just fine.

The next question was the actual amount of my proposed investment. Granik said that he had already lined up several large investors, but because of my desirable status as a local area resident, he'd let me in "for a song." I suspected that he really meant folding money rather than eight bars of *Roll Over, Beethoven* scribbled on his brocade tablecloth. I told him that I had been tossing around the idea of picking up a couple of shares to the total tune of $1000 to $2000. Unfortunately, he was marching to the beat of a different drummer, being under the impression that I was going to sing him a song that sounded more like $25,000 to $50,000.

At the realization that my offer was only slightly less than the value of his time and the cost of the sumptuous brunch I had just devoured, he stood there in a silent reverie for a few moments. He lit up a $10 panatella and puffed it a few times while a cloud of dense smoke engulfed his head. Was his next step to bring the lit end sharply down on my hand? No way! He just chuckled wistfully and offered me another cup of coffee and one of those eight-inch stogies. He was philosophical, saying that since we were friends rather than just business associates he hoped I'd still be interested in hearing more about his plans. He removed his tie and dressing gown, and rolled up his sleeves.



The tower nobody wanted to erect, Channel 67, was finally constructed anyway.

His plans included an idea that he felt was a real coup. The station's antenna was to be installed at the top of an unused tower owned by AM broadcast station WPAC (ex-WAPC, now WLIM). The station had three towers but was using only two of them. These arrangements would save the high costs of putting up a new tower.

I knew of the AM station he was talking about. It was located away from the receiving direction of the majority of existing TV antennas in his proposed two-county coverage area. I suggested that his TV station might not acquire much of an immediate audience because people would have to shell out money for new TV antennas just to pick up its signals or else reorient their existing antennas away from the network stations in New York City. Somehow I doubted that very many people would look kindly upon those schemes for the honor of viewing a new and unproven independent TV broadcaster.

He disagreed, saying that the signal would easily cover both counties because it was omnidirectional in design. He unrolled

(Continued on page 72)

MAILBAG LETTERS TO THE EDITOR

Each month we select representative reader leters for our Mailbag column. We reserve the right to condense lengthy letters for space reasons. All letters submitted for consideration must be signed and show a return address. Upon request, we will withhold sender's name should the letter be used in Mailbag. Address letters to Tom Kneitel, Editor, Popular Communications Magazine, 76 North Broadway, Hicksville, NY 11801.

Write On!

How about starting pen pal section so we can share our ideas and listening experiences with others who enjoy the hobby? I also would like to see a QSL card exchange section started. I collect QSL's from CB, ham radio, and shortwave. I have cards to swap 1-for-1, but want to be in touch with others who collect them. I say let's give it a try and see what kind of response comes in. I enjoy everything in *POP'COMM*, keep up the excellent work.

Steve Rakezynski,
P.O. Box 553,
Manistee, MI 49660

Readers sharing Steve's interests might wish to communicate with him directly. Readers who have strong feelings for or against Steve's suggestions are invited to let us know here at the magazine.—Editor

Oh, Give Me A Clone Where The Buffalo Roam!

I enjoy *Popular Communications*, and am a subscriber, but I would get more out of the magazine if you had articles about state of the art electronics, trunking, VHF business systems, and Motorola equipment, rather than nostalgia (which I consider useless filler).

Charles L. Bloss, Jr.,
Lecompton, KS

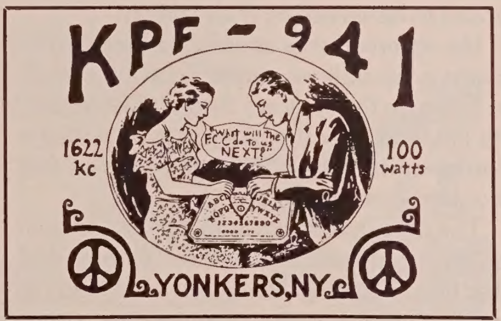
While I think *POP'COMM* is great, it could be considerably improved if you'd dump your dumb shortwave broadcast DX coverage and install a really good in-depth series on repairing stereos, radios and TV receivers.

Ted Bollinger,
Falmouth, MA

It must be noted that we also get letters from those who enjoy the magazine but would like it even better if we added coverage of tape decks, electronic music, VCR's, CD's, record reviews, advanced construction projects, computer technology, communications industry news and stats, commercial recording techniques, construction projects, stereo receivers, automotive and marine electronics, more equipment reviews, basic-to-advanced electronics theory courses, etc. Usually, those who suggest these topics are thoughtful enough to offer a list of our regular columns and features (invariably described as "filler") they'd happily see sacrificed to make room for their pet topic. There hasn't been a single area of our coverage that hasn't been volunteered as a candidate for the chopping block by people who "love the magazine . . . but." While it would be great to be able to cutomize the magazine to suit individual preferences, mostly we endeavor to produce a publication with the widest possible interest and appeal while remaining within the basic idea of what we feel POP'COMM is. Most of the "I love the magazine . . . but" topic suggestions lie far outside what the magazine is all about and would require a major revamping of the POP'COMM concept. Fact is, the existing concept is successful and we sort of like it, as do the majority of our readers. We enjoy bringing a unique mix of coverage areas usually passed over by tech and other journals. We have no aspirations to become one more clone of the dozens of other publications that already cover stereo, Motorola, computers, etc., more than adequately.—Editor

Unissued QSL Card

The Story on *The Day The Falling Star Network Fell* (July issue) was the first time the facts have been presented. Your readers may want to see a copy of an unissued QSL from our station KPF941. We were all set to release these QSL's in late 1984 when the FCC lowered the boom on this licensed station. It has never before been published.



Allan Weiner,
Radio Newyork International,
New York, NY

Hey, Dave! You Still There?

There are rumors that the anti-Castro *Comandante David* broadcasts are back on the air again. Heaven will bless you if you can provide details.

W.C.J. Motzel, KGA4KV,
Douglas, GA

After a period of silence, these transmissions returned to the air. As this is being written, they are most often noted in AM mode around 0000 UTC on 7050 kHz, Mondays, Wednesdays, and Fridays. This is a mobile station that operates from locations in Florida, usually in Dade County or around Ybor City (near Tampa). The transmitter is in a rental trailer that is driven to various locations where dipoles are erected for the evening's broadcasts. Fidel has always been livid about these broadcasts and last spring he filed a complaint with our State Department about the latest barrage of transmissions. The State Dept. said they'd notify the FCC, but the FCC has never appeared to be very enthusiastic about tracking down this station so it's doubtful they'll be anxious now.—Editor

Meter Reader

Having just gotten started in shortwave listening (thanks to *Popular Communications*), I am still groping my way through a maze of terms that are new to me, like QSL's, interval signal, and the like. I hope this question isn't so basic that it makes me appear the fool, but I haven't been able to get a clear grip on the apparent relationship between kHz, MHz, and meters when specifying a broadcaster's dial position.

W.A. Dietrich, Sr.
Windsor Locks, CT

Many years ago, dial positions were specified to listeners according to the measurement of the length of a station's radio wave. Hence the term "wavelength," and it was stated in meters. A broadcaster might be said to be operating on a wavelength of 238 meters, or whatever. After a while (at least in North America), the dial position was given in kilocycles (now usually referred to as kiloHertz), so the station on a wavelength of 238 meters had its dial position stated in its equivalent frequency, 1260 kilocycles (now known as 1260 kiloHertz, or kHz). MHz is merely a different way of stating a frequency that's often more convenient for higher (that is, shortwave) frequencies. Frequency 39,050 kHz is usually stated as 39.05 MHz—you simply change the furthest left comma to a decimal point to convert kHz to MHz, and vice versa. Shortwave frequency 6,030 kHz is exactly the same as 6.030 MHz—take your pick as to which way you prefer as frequencies between 2,000 kHz and 30,000 kHz (2 MHz to 30 MHz) are given either way, although frequencies higher that are stated in MHz (or other terms as you get into the area of microwaves). Shortwave broadcasters and hams don't set up shop on random frequencies, they (usually) operate within certain bands set aside for their activities. These bands are generally referred to by their approximate wavelength—the 49 meter shortwave broadcast band at 6 MHz, the 20 meter ham band at 14 MHz, etc. Hope that didn't confuse you all the more. Your question is one we receive here several times per month.—Editor

PC

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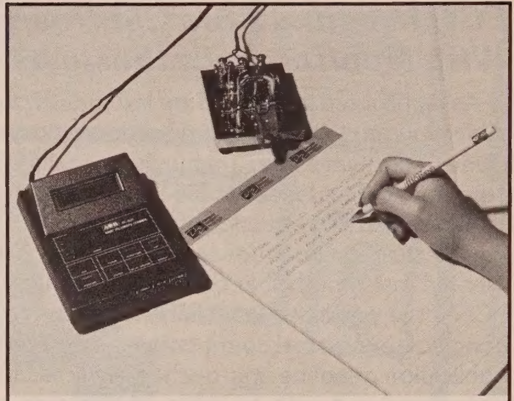
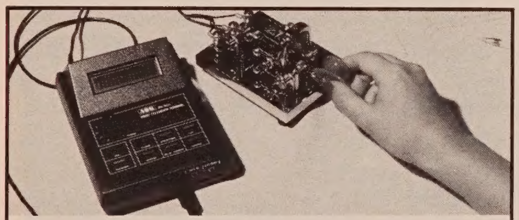


DECODER

Input level	• 10mV to 2V RMS.
Input impedance	• 8 to 1kΩ—600Ω typical
Decoding speed	• 5 WPM to 30 WPM
Audio filter	• 800 Hz ± 80 Hz Active and PLL filters 700 Hz to 900 Hz internally adjustable.

TRAINER

Code generator	• Random code generator 5 characters/code group
Speed	• 5 WPM to 30 WPM 1 WPM increment



ELECTRONIC KEYER

Paddle input	• TTL level —LO/Actuating, HI/Stop Contact input —ON/Actuating, OFF/Stop
Key input	• TTL level —LO/Mark, HI/Space Contact input —ON/Mark, OFF/Space
Keying speed	• 5 WPM to 30 WPM 1 WPM increment
Keyer output	• Transistor switching, Open collector type

SPECIFICATIONS

Model	• AR-501 Radio telegraph terminal
Power source	• DC 12V to 13.8V—165mA
Size	• 4.5″-W x 2.24″-H x 6.25″-D
Weight	• 12.5 oz. (358 g)
Controls	• Power On/Off • Random code generator On/Off • Print-out On/Off • Monitor speaker level • Electronic keyer mode select • Speed Up & Down
Display	• LCD 32 characters—16 per line
Indicators	• Power On—Green LED • Tuning—Red LED
Front connections	• Paddle—Standard/Iambic • Ordinary telegraphic key • Headphone/Earphone
Rear connections	• DC 13.8V input • Audio input • External speaker • Keyer output • Printer output

PRINTER PORT

- Compatible with Centronics 8-bit parallel printer. At least 4K byte data buffer is required in a printer.

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FCC Labeling Stirs Controversy With Monitoring Enthusiasts

As highlighted in this column last month, the FCC has proposed a labeling requirement on monitor readios, which apparently includes shortwave and manually tuneable VHF/UHF receiving equipment. The labels would inform users of the equipment that there are certain restrictions in what can be listened to because of the Electronic Communications Privacy Act (ECPA). We commented last month that SCAN *is* in general agreement with the FCC *if* the proposed label is handled correctly. Our hope was to bring you our formal comments to the FCC this month, but as the publication deadline approached the final language was still being hammered out with SCAN's Washington representative. We'll bring it to you next month.

It is clear, however, that not everyone agrees with our position. While their position was not finalized at press deadline either, we received word that the Association of North American Radio Clubs (ANARC) is considering opposing all labels. Certainly it is a controversial issue with the entire radio listening community, including SCAN members. Our feeling is that labels are far better than restrictions on equipment capabilities *provided* that they are reasonable in content and don't scare away new users. And that's the big "if" of course. If we end up with threatening language, or with a warning that raises more questions about the legality of listening than it answers, we could scare away millions of potential new monitoring enthusiasts. But explaining the ECPA in terms most people would understand is a real challenge. Your suggestions are most welcome.

There is also the question of why the FCC has proposd labels for scanners and shortwave receivers but not for tuneable TV receivers and other consumer devices. The FCC seems to be walking a very fine line. On the one hand, it says that consumer equipment designed primarily to receive domestic broadcasts are exempt. On the other, it says that equipment designed primarily for licensed radio services are exempt. Scanners and shortwave receivers are caught in the middle.

There is also the issue of why the FCC has not proposed labels on cellular telephones. After all, the ECPA in suggesting labels on scanners also suggested information labels on phones. Has this really been thought through by the FCC staff, or is it the pressure and enormous resources of the cellular industry that is the real reason?

How Do Fifty ECPA Battles At Once Sound To You?

We try not to be alarmist in this column, we're more likely to explore the facts before we write about it. But just as we go to press, we have received word that some people have found a potentially disastrous provision in the ECPA language. As we understand it, the law carries a provision that says each state's wiretap laws must be *at least as strong* as the ECPA. Can you imagine each state legislature wrestling with that? Talk about Pandora's box! In general, there is very little technical comprehension at the state level. They do not have the background encompassing the arguments surrounding it. The significance of the hard fought victory that preserved the right to manufacture and sell equipment covering all frequency ranges. So what is the easiest way out for a state to deal with compliance under ECPA? Why, err on the safe side, of course! Make SURE that the state law is AT LEAST AS TOUGH as the federal ECPA law! I think you can already see one of the easy solutions . . . just ban scanners altogether and that will take care of the problem for sure!

Before we panic, however, it is still unclear as we go to press if this provision in ECPA really applies to radio communications or just conventional wiretaps of phones. That was how ECPA got started, you know. Simply a desire to tighten up the wiretap laws by including new technology such as microwave links. Along the way, some people in the cellular phone industry attempted to "legislate privacy" for open omni-directional radio communications used with cellular radiophones. The end result is a convoluted piece of legislation that attempted to extend the meaning of traditional wiretaps to cellular radio phones. It may be that the state law provisions in ECPA apply only to conventional wiretaps—that is certainly our hope. If we find out otherwise, we're going to have to urgently enlist scanner owners in each state to alert us to proposed state ECPA legislation and begin to educate law makers on the state level. We hope that won't be necessary, but we'll keep you posted.

Your Help Needed

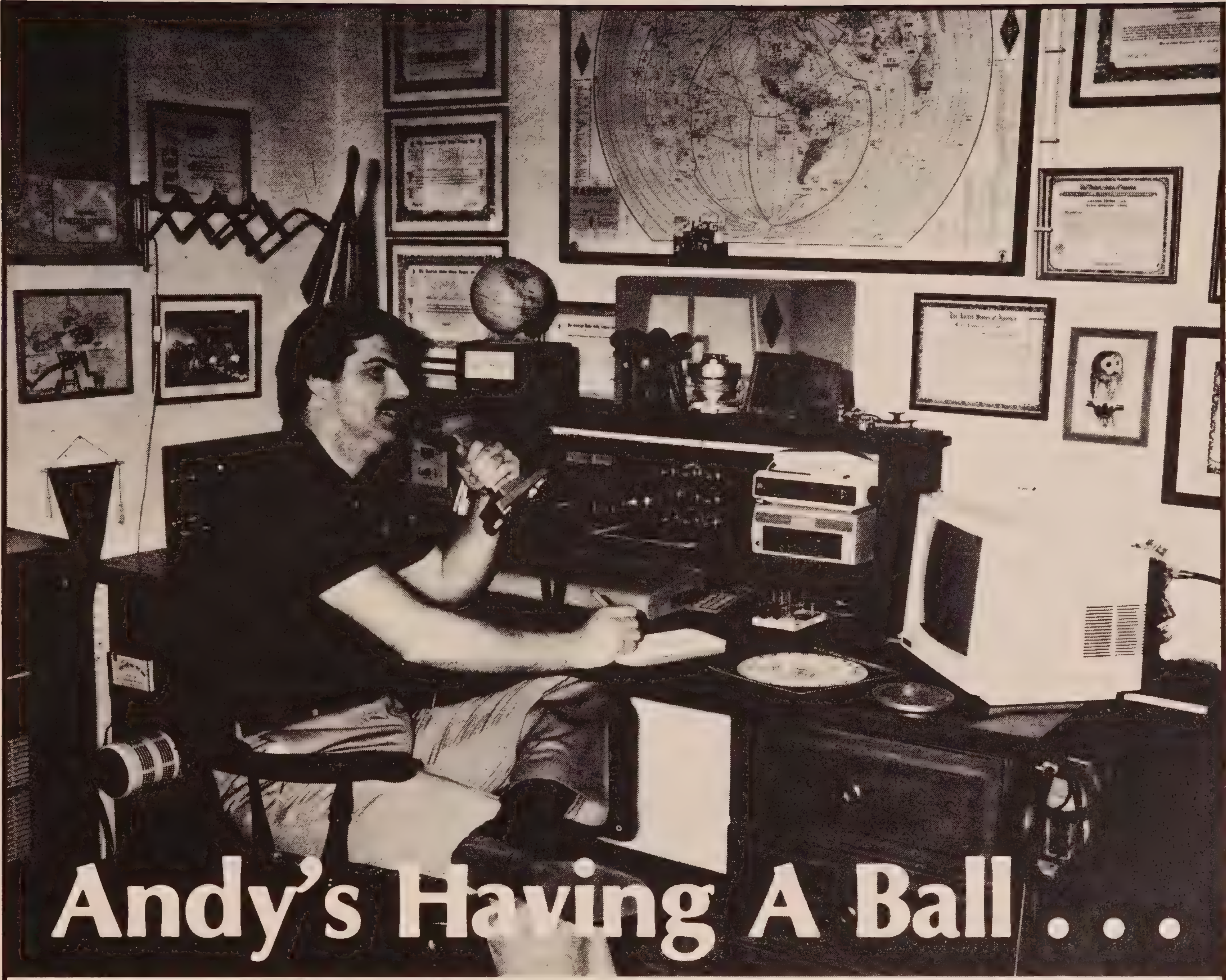
We have rarely had to ask for financial assistance, but the new press of work related to ECPA takes a good deal of resources. Especially important is our representation in Washington, D.C.—and that takes money. Whatever you can send us . . . $10, $5, or even $1 will be put to good use. The address is SCAN Defense Fund, P.O. Box 414, Western Springs, IL 60558. Please be as generous as you can.

As a token of appreciation to those sending $5 or more to the fund, we will mail you the handsome new SCAN FCC Frequency Allocation wall chart. Printed on heavy gloss paper, it measures 16″ × 21″, making it perfect for posting in your monitor station. It includes the new 800-900 MHz allocations and has an easy-to-read unique graphic format. Available only from SCAN, you won't want to miss having one . . . and at the same time you'll have the satisfaction of knowing that you played an important part in helping out in the defense of scanning.

Phone Crises Revisited

We had the opportunity to visit with some of the staff at the hospital most impacted by the event (see *Scanning Today* column in the August issue). The first two days before any phone service was available was the crises period. Cellular phones didn't work, either. That left two-way radio as the only means of communications support. Police and fire handled emergency calls for assistance, but communications to and from local doctors had to be handled by back-up radio and mobile units. Several nurses told me about speaking over 2-meter hand-talkies to maintain communications with doctors from their offices. It was really important and they had high praise for the volunteer Amateur Radio operators who helped out.

As we've said before, when a disaster hits, don't count on the phone network. Be it a man-made or natural disaster, the lines will become hopelessly clogged. The system has no way of knowing whether your call is a true emergency or not, so it goes into "electronic grid lock". Well disciplined, two-way radio networks have to step in. It's the human factor of being able to prioritize the urgency of each call. The police and fire radio networks generally have their hands full at times like these . . . so enter the volunteer radio networks, be it Amateur Radio, GMRS, or REACT. A well trained network can really pay off when a disaster hits, yet there seems to be little comprehension on the part of the general public until it's needed. So, to all those unrecognized emergency radio groups out there, we salute you!



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DX'ing The Soviet Republics

Are They Gabbing About Glasnost?

BY GERRY L. DEXTER

The center of Yerevan, capital of the Armenian Soviet Socialist Republic, was jammed with several hundred thousand people. Their demonstration brought daily activity in the city to a halt. In the neighboring Azerbaijan Soviet Socialist Republic some 31 people were killed in riots which swept the city of Samgait. Soviet troops even had to be called in to restore order. Earlier last year, smaller protests sprouted in the Latvian, Lithuanian and Estonian Soviet Socialist Republics.

There was a time (and not so long ago, either) when the Soviet Union was about the last place on earth one would expect such events to take place. But in the time of Mikhail Gorbachev such heretofore alien concepts as *perestroika* (restructuring) and *glasnost* (openness) about which we in the west hear so much, have brought up new problems and exacerbated others.

The gigantic USSR contains well over 100 distinct nationalities or ethnic groups of various religious, cultural and racial backgrounds. The experts say that sometime around the turn of the century the Russians will become a minority people within the Soviet Union!

Some of the ethnic groups are very small and some have largely melted into other groups. Some are very large and maintain a strong sense of self identity. The Muslim population is a very large segment and the fastest growing. The larger ethnic groups are to be found within the borders of the various Soviet Socialist Republics. Joe Stalin himself set the requirements for the creation of SSR's: such political subdivisions had to be on the frontier of the USSR, had to have a population of a million or more and the nationality for which the republic was named had to be the majority population within that republic.

There are 15 such republics. Each one has its own constitution, its own supreme Soviet and supreme court. Each, in fact, has the constitutional right to secede from the Soviet Union if it chooses to do so. In actual practice, however, such an attempt would get nowhere. The USSR constitution says that any action taken by a Soviet Socialist Republic can be reversed by the Supreme Soviet of the USSR or the Presidium of the USSR, or even by any USSR ministry. Moscow directly controls such major areas as foreign relations, trade, defense and the economy of each republic.

A folder from Radio Vilnius, Latvian SSR.

Due to the stirrings of ethnic unrest and, for that matter, the changes taking place throughout the entire country, the shortwave listener and DX'er may find tuning for the various republics a greater attraction these days than it perhaps was earlier. But changing times in the USSR have not made it any easier to notch them into your logbook or QSL collection. Broadcasting from the republics is part of the extremely large and maddeningly complex state broadcasting system. All of which is made worse by constant rearrangements in time, frequencies, services aired and so on. The poor DX'er is often left to figure things out for himself and never be really sure if he has tuned what he thinks.

There are three distinct levels of possibility when it comes to trying for the various republics. The first choice, at least for pure DX types, will be to tune in on locally originated programming coming from a transmitter within the republic in question. The next is direct reception of a transmitter within the republic whatever type of programming it might be carrying—Radio Moscow's World Service, Mayak Radio or whatever. The third choice, and of probably greater appeal to the listener interested in program content, is picking up an external service from the republic no matter where the actual transmitter site may be.

More often than not, only one, or two, of the three possibilities will be offered by a particular republic and the listener simply has to take his or her best shot at what's there.

What we attempt here is a survey of the various Soviet Socialist Republics with some notes on the best approach to hearing each one. We are going to ignore two of the 15: the Russian Soviet Federated Socialist Republic (Moscow) since there are too many sites and varients to handle here, and the Moldavian SSR which has not had shortwave activity for a long while.

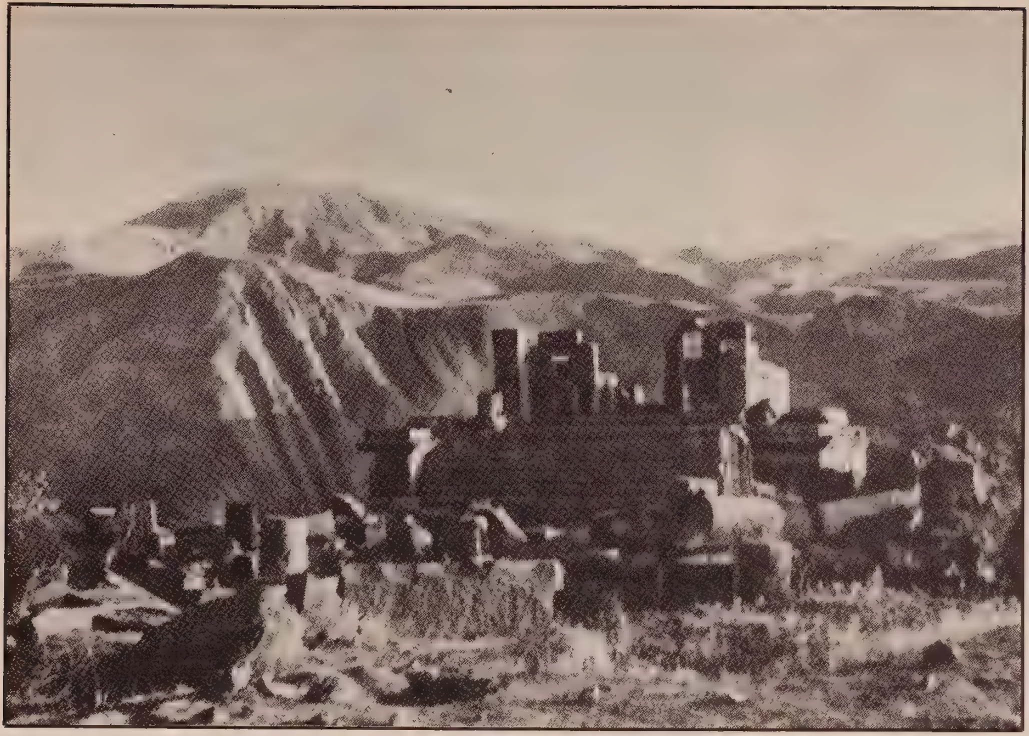
ARMENIAN SSR. The smallest of the republics, the Armenians have a long history which tells many tales of invasion and persecution. The riots mentioned earlier dealt with the reunification with a part of neighboring Azerbaijan, known as Nagorny Karabakh, an autonomous region with a predominantly Armenian population. Even the Communist Party in this area has voted to join with Armenia.

Reports of the foreign service of Radio Yerevan are normally few and far between. The North American Service has consistently been scheduled too late and on frequencies too high for easy reception in most of North America. With increased solar activity, however, reception is more frequent these days. The broadcasts are mostly in Armenian, with a brief English newscast carried during the last five minutes. This is currently scheduled at 0300-0400 on 7164, 11790, 11860 and 13645. Also at 0800-0900 (with French the last few minutes) on 15455, 15485 and 15510. Also try 2200-2300 (with Spanish the last few minutes) on 9470 and 9480. These transmissions are via Radio Moscow facilities, however, and may originate anywhere in the USSR.

Domestic services, aired from transmitters near Yerevan, run from 0200 to 2100 on 4040 and 0200 to 2200 on 4990. These are very difficult catches but 4040 is sometimes heard during the early evening hours in the U.S.

AZERBAIJAN SSR. This is the other half of the Armenian question which has caused some sleepless nights in Moscow. In addition to riots in Samgait there were others in Kirovabad. Azerbaijan is predominantly Shiite Moslem, while Armenia is mainly Christian. Disputes between followers of the two religions in this area date back some 150 years.

Radio Baku does not carry any English programs. What little foreign service it does have isn't easily heard. It is scheduled in Farsi from 0330-0445 and 1100-1145 on 6110



Ruins of an ancient church (1st century AD) in Garni in the Armenian SSR.

and 6135. In Turkish from 1200-1300 and 1500-1600, in Azeri from 1300-1500 and Arabic 1600-1700 on the same two 49 meter band frequencies. We stand a somewhat better chance of bagging the local Baku outlet on 4785 which is on the air from 0200 to 2000 with local programming and the USSR first program. This can sometimes be heard in the mornings before the band drops out.

BYELORUSSIAN SSR. Also known as White Russia, Byelorussia's large Jewish population was decimated by the Nazis during the war. The area has been battered by Russian-Polish wars during the 16th to 18th centuries, the Napoleonic invasion of 1812 and the Soviet-Polish war of 1919-20. After that conflict the western portion went to Poland, the eastern areas became the Byelorussian SSR. Soviet troops occupied the western portion in 1939 and most of the west joined the republic in 1945.

Radio Minsk has a foreign service but it is mostly in Byelorussian. It airs from 2100-2200 on 5950 (or 6165), 6065 and 6185. The broadcast is in German on the 2nd and 4th Saturdays of the month. Other frequencies used by Minsk to relay various USSR services include 7210, 9645, 9795 and 11995. Two additional transmitter sites in the republic are at Orsha and Moghilev, both used for various USSR program services.

ESTONIAN SSR. The Estonians are related to the Finns who settled the region before the first century AD. The republic is situated on the Baltic Sea, Gulf of Riga and Gulf of Finland and so, not surprisingly, includes fishing and ship building in its industrial repertoire. It was annexed by the Soviet Union in 1940, though held by the Germans from 1941-44.

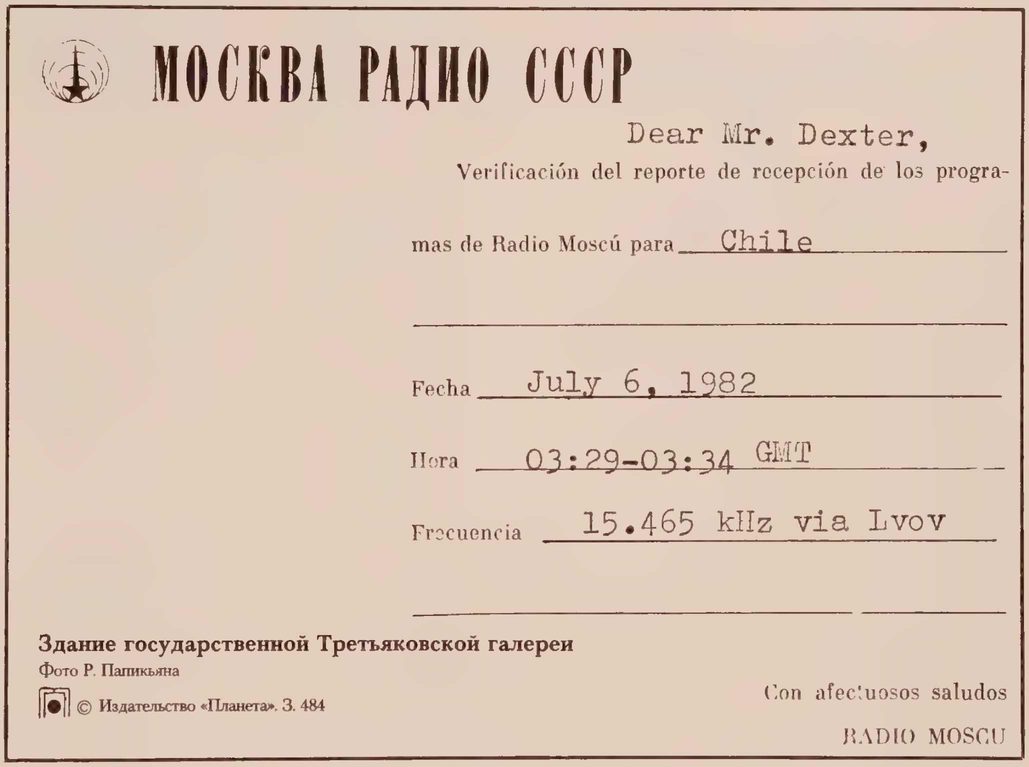
It is easy to remember frequency details for Radio Tallinn, because 5925 seems to be the only one in current use. A Monday through Saturday schedule includes Finnish at 1600-1630, Estonian 1630-2100, Swedish 2105-2135 and Estonian again at 2135-2205. On Sundays, programs in Finnish are at 0800-0900, Swedish 0900-1000 and Estonian 1000-2100. The best chance for logging Radio Tallinn is around 2100-2200 after this frequency area has begun to propagate to North America.

GEORGIAN SSR. The memory and reputation of Georgia's favorite son, Stalin, is in disrepair these days. The area's history dates back to the 4th century BC when it was known as the Kingdom of Georgia. Today, it provides most of the nation's tea and citrus fruits, as well as a popular resort area on the Black Sea coast. Georgia was independent briefly from 1918-21 but has been under the Soviet since then.

Radio Tbilisi recently opened up a new transmitter on 4875 which carries a mix of Mayak and local programming from 0200 sign on to close at 2100. That's not a good source for reception by North American listeners, though. The same time schedule applies to 5040 which is heard several times a year from 0200 sign on. 5930 is also in use from 0200 and offers some possibility for logging. Programming, except for relays of various USSR local services, is in local langauages.

KAZAKH SSR. There have been protests here, too. Two people were killed and 200 wounded in 1986 riots protesting Moscow's removal of a local leader and his replacement by a Russian. Kazakhstan was ruled by Mongols from the 13th to 18th century, then the Russians, becoming a USSR republic in 1920. It's the second largest republic in size, third largest in population.

Radio Alma Ata has a rather extensive schedule of broadcasts in Kazakh and Russian. Currently: 2300-1700 on 5960, 5970, 6180; 1930-2130 on 7140; 0000-1800 on 9505; 2100-0000 on 9570; 1130-1700 on 7125; 2230-0030 on 7125; 2200-0300 on 11745; 0900-1400 on 11765; 0830-1500 on 11775; 2300-1800 on 11950 and 1330-1430 on 15230. There are many chances there but, unfortunately, the same number of chances that frequencies will be blocked by QRM or not propagationally possible or contain more than one Soviet transmitter in operation.



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Fecha July 6, 1982

Hora 03:29-03:34 GMT

Frecuencia 15.465 kHz via Lvov

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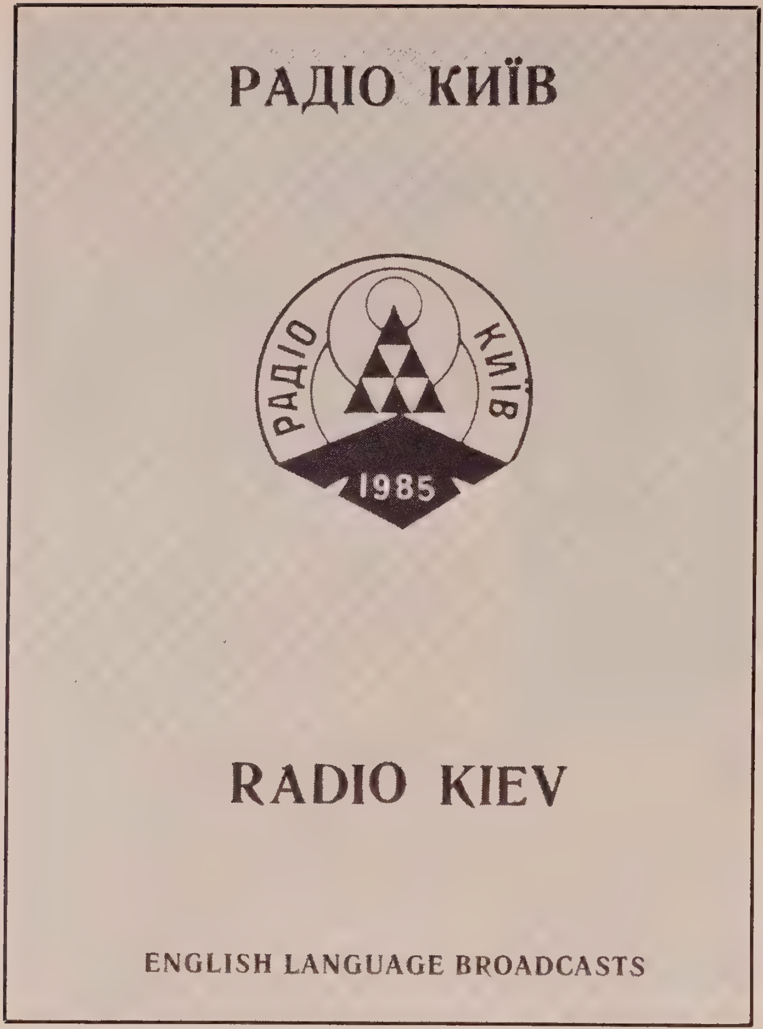
RADIO MOSCU

A QSL card from Radio Moscow specifies reception of the Lvov transmitting site in the Ukraine.



РАДІО КИЇВ

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RADIO KIEV

ENGLISH LANGUAGE BROADCASTS

A program/information folder from Radio Kiev.

Harju Street in Tallinn, capital of the Estonian SSR.

So it's probably simpler and easier to check for Alma Ata between 000 and 2200 on 5035 or 5260. These two frequencies are fairly often heard by DX'ers in the U.S. and are likely your best bet.

KIRGHIZ SSR. Half of the population of this mountainous republic in central Asia (bordering on China) is Muslim. The people have a nomadic history and produce livestock, cotton and sugar beets. Minerals and metalurgy are also big. The Kirghiz became a Soviet Republic in 1924.

Radio Frunze is one of the tougher ones to log. A home service in Kirghizian, Russian and German airs from 0000 to 2000 on 4010 and 4050, but the latter frequency has other Soviet outlets using it too. Sometimes, if the wind is in the right direction, you may be able to hear Frunze in the early evening or early morning. Otherwise it is a matter of trying to locate a Radio Moscow transmission via the Frunze transmitter site, and these often change. In recent months, 15140 and 15420 have had the Frunze relay in use.

LATVIAN SSR. This area was conquered and Christianized by the Livonian Knights and, in the decades and centuries which followed, has been ruled by Poland, Sweden and Russia. Latvia was independent in 1920 but taken by Russia in 1940, then under German occupation between 1941-44. Most of the people are Letts and Latgalians.

Radio Riga can probably be best heard on shortwave on 5935 between 2000 and 2200 when it airs various Latvian programs and Soviet services. Overall, the frequency is in use by Riga from 0300 to 2200 although this is on a very choppy basis, with gaps in coverage some days and not others. Some days broadcasts are in one language at a particular time and a different one at that time the next day. Also, there are other Soviet transmitters using the frequency on and off so the watchword here is careful listening. You can probably pick out the word "Riga" used in local station IDs.

LITHUANIAN SSR. This area, in the west European part of the USSR, was settled as early as 1500 BC and, by 1300, had forged itself into a strong state. It gradually merged with Poland during the period 1386-1569 AD, came under Russian control from 1795 but was briefly independent in 1918 although Poland still controlled Vilnius, the capital. The Soviets occupied Lithuania in 1940 and the Germans in 1941-44.

Radio Vilnius has a foreign service which includes English to North America, currently at 2300-2330 on 6200, 7165, 7400, 11720, 11960 and 13645. These frequencies, however, are used by Radio Moscow facilities and not transmitters within Lithuania.

There seems to be only one shot at direct reception of a Lithuanian transmitter, the outlet at Kaunas which uses 6100 from 1700-2300 in Lithuanian. This QRM-filled spot will make reception very difficult. It will probably be necessary to monitor the frequency and hope a window through the QRM appears during the hours the band is open.

TADZHIKITAN SSR. The Tadzhiks are Sunni Moslems and live in an area which is largely mountainous. The mountains include the USSR's highest peak (would you believe it's named Mt. Communism?). The Tadzhiks were ruled by Mongols, Uzbeks and Russians between the 13th and 19th century. The area became part of the USSR in 1924.

Dushanbe Radio is another which requires extra effort. The station airs local programs in Tadzhik, Uzbek and Russian from 0000 to 1300 on 4975 and 0000 to 1800 on 4635. The latter frequency can be heard at times, often in streaks over several days at a time, after which it may not be noted again for weeks or months. So check 4635 during local evenings. Sooner or later you should bag it.

TURKMEN SSR. 90% of this republic is made up of the Kara-Kum desert. The Turkomens are a Sunni Moslem people and make up 60% of the population. The area was once a part of the ancient Kingdom of Persia and was later ruled by Arabs, Turks, Uzbeks and Russians. Turkmenia became part of the USSR in 1920 and a republic in 1925.

Ashkhabad Radio has no foreign service but it is possible to hear the local transmitter when conditions are right. Again, it is largely a matter of frequent checking. 4825 is in use on a virtual 24 hour basis with programming in Russian and Turkmenian. 4930 operates from 2330 to 2200, though it's not the only Soviet here. 5015 is in use, with some breaks, but Arkhangelsk is here pretty much around the clock as well. Try the latter frequency later in the evening when the Latins in this area are gone.

UKRAINE SSR. Twenty percent of the total population of the USSR live in the Ukraine, which supplies 25% of the nation's foodstuffs. It borders the Black Sea, Poland, Czechoslavakia, and Romania and was, of course, home to the Chernobyl nuclear disaster.

Radio Kiev has an easily heard foreign service which includes English to North America, currently at 0030-0100 and 0300-0330 on 6020, 6200, 7145, 11790, 11890 and 13645. These frequencies carry transmitters normally used by Radio Moscow and so may be located anywhere within the country, including the Ukraine.

The Ukraine has many transmitter sites used for Radio Moscow and other Soviet services. These include facilities at Ivano-Frankovsk, Kharkhov, Lvov, Simferopol, Starobelsk, Nikolayev, Uzhgorod and Vinnitsa. The best method here is to take logs on several frequencies used by the World and North American services of Radio Moscow, send reports on each and ask that the transmitter site be indicated on the card. At least one of the above sites will probably be indicated out of every five or 10 frequencies you report.

UZBEK SSR. Rice and cotton are the big income sources in this republic, which borders Afghanistan. Before coming under Russian control in 1873 it had been ruled by a long line of conquerers, including Alexander the Great. The Uzbeks are a Sunni Moslem people.

Radio Tashkent has a foreign service which includes English, though it is not directed to North America. Still, it isn't all that hard to pick up. Try 1200-1230 or 1330-1400 on 7275, 9540, 9600 (alternate 9715), 11785 and 15460. Local programming can sometimes be heard direct on 4850 between 0000 and 1800 sign off.

That's it. There is just no smooth and easy way to hear all of the republics on the list. The reader who really wants to achiee this DX'ing goal must approach it with dedication, resolve and planning. And be armed with as much information as possible, including the *World Radio TV Handbook* and at least one good monthly DX bulletin. Networking with other DX'ers out to achieve the same end will also be a tremendous help.

This article will get you off to a good start but remember that frequencies and schedules, particularly those on the higher frequencies are constantly changing. Thus there is no way the serious Soviet-interest DX'er can escape the need for fresh information and the need to spend time doing his own research into what's on and where to find it.

Good luck!

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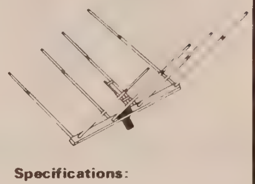

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Side Rejection: 45-50 DB True
Back Rejection: 45 DB True
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SWR: 1.1
Horz. to Vert.
Separation: 20-25 DB
Wind Survival: 100 MPH
Power Multiplication: 50X
Audio Gain: 20 DB
Wind Load: 3.7

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Side Rejection: 45-50 DB True
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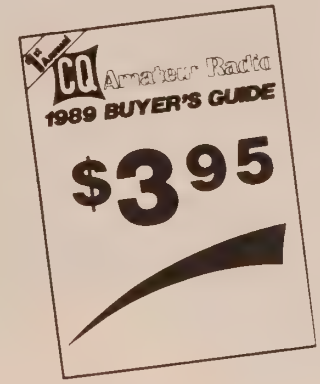

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The Ghost Of County Line Road

What? A "Spy Numbers" Station Discovered in Florida? The Inside Story!

BY HAVANA MOON

As "spy numbers" stations revelations go, Larry Van Horn did a fine job recently in *Monitoring Times*. He told of one such station apparently operating on the eastern coastline of Florida. As with most early reports of mystery stations, additional information eventually begins to surface in response to the many unanswered questions that had been raised.

Van Horn's discovery raised just such questions. At this time I don't claim to have all the answers, and this certainly isn't "the rest of the story." In fact, my information will undoubtedly only serve to raise as many questions as it hopes to answer in this tale of confusion, intrigue, numbers transmissions, ghosts, misinformation, disinformation, and you name it! I'll give you information on how to drive there yourself! And, if you can't find the time for a visit, I'll show you previously unpublished photos of the alleged home of this strange 4670 kHz source of mysterious transmissions in the Jupiter/Tequesta area of Florida.

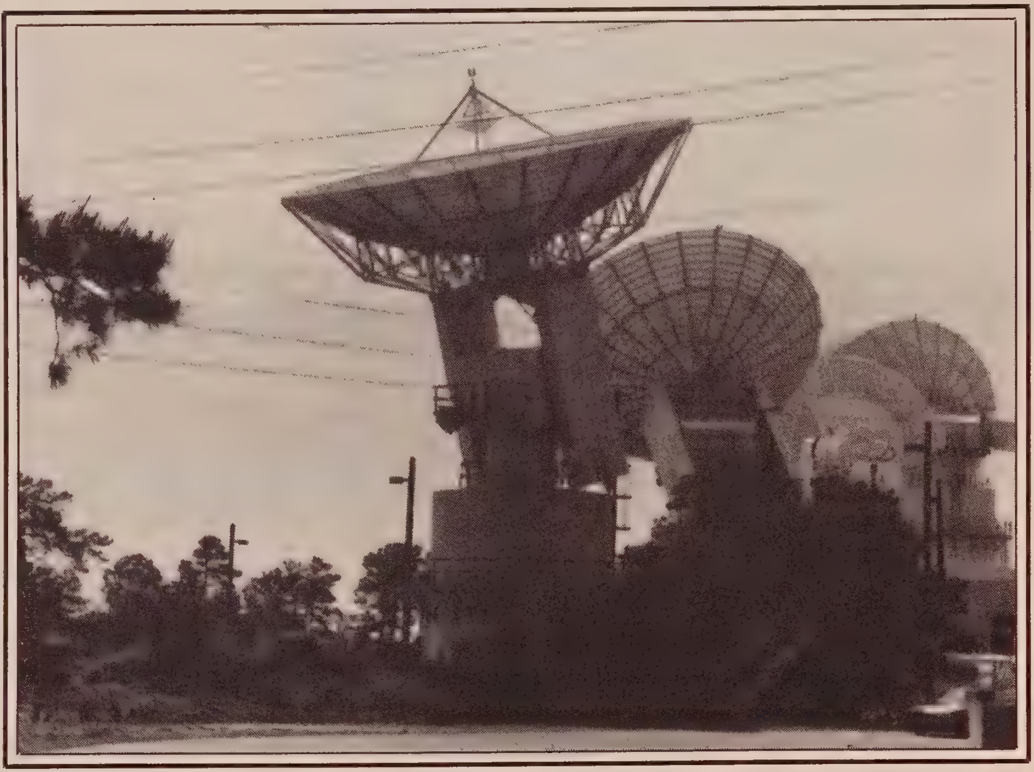
Readers are cautioned that the term "mystery sites" does not necessarily mean "numbers" sites!

Geriatric Jupiter/Tequesta ain't! It's "intrigue city," friends! Intrigue of a sort that's even unknown to UZI City (Miami)!

The Jupiter/Tequesta area is about a twenty to thirty minute drive (depending on traffic) to the north from West Palm Beach. Take Florida's Turnpike or I-95 and turn off at the Jupiter exit and continue east to U.S. Highway 1. One of the first sights you will notice shortly after heading north on U.S.1 is the Jupiter Light!

All sites described in this article are easily accessible from U.S.1.

Yes, folks, we've been told of a four-digit "numbers" station in one of the few remaining pristine pieces of paradise that is known as Florida! I've been telling you of Florida sites for years and years, and saying that "numbers" stations of the four and five-digit variety abound in Florida. It's a "bitter pill" for some to swallow! So be it!



The USAF missile tracking station in Tequesta, FL.

How dare some few members of the sleazy five-digit crowd leave Havana!

A Trip To Tequesta

Nestled among the high-rise apartments and instant condo villages of Jupiter/Tequesta lurks a "numbers" ghost (or so we've been told) on 4670 kHz (2100 UTC) and heaven and NSA only knows what else! And her home MIGHT JUST BE NORTH RATHER THAN SOUTH OF THE JUPITER INLET!

It's also possible that her home might even be just a little to the northwest of the inlet! County Line Road in The Village of Tequesta to be exact!

I have a bit of trouble with the reported location of "just south of the Jupiter Inlet!" And I'll tell you why in just a few paragraphs!

I know of no better word to describe this 4670 kHz YL than *ghost*! She is—without question—the unseen (and now unheard) inhabitant of the electromagnetic spectrum. At times this YL appears to some few of the living (in mental-visions, of course) in bodily likeness! In reality she has never been seen!

Careful monitoring by a Tequesta, FL source indicates no "NUMBERS" activity on 4670 kHz at 2100 UTC and various other times for the past several months! This source says that only a "Phonetic Alphabet Station" has been heard on this frequency after 0200 UTC! And signal strength of these stations is reported to be very weak! And keep inmind that 4670 kHz was once a VERY ACTIVE "numbers" frequency! And 4670 kHz—some few times—paralleled with 4307 kHz!

Can you imagine that "once-upon-a-

The 2 GHz microwave link at the tracking station.

time" we were led to believe that this 4670 kHz YL's home was the Warrenton/Remington areas of Virginia! Maybe Florida is her winter home! And maybe there are many sites along the U.S. East Coast that—at random times—are home to 4670 kHz as well as other "numbers" frequencies!

Keep in mind that the least surprising possibility is often the most likely!

There are strong indications of other mystery sites (not "numbers" related) from some few members of various law enforcement officers of the Jupiter/Tequesta area who don't care to discuss these sites! The BIG QUESTION is why! And—without question—these vague hints arouse my curiosity!

According to the *MT* report, the exact location of this 2100 UTC/4670 kHz four-digit "numbers" station is 26 degrees, 56 minutes north and 80 degrees, 5 minutes west. It is also stated that this site is just *south* of the Jupiter Inlet.

Here are a few other reasons why "just south" of the Jupiter Inlet is *not* a good bet! Just south of the inlet is DuBois and Carlin Park which are both open to the public! There's also Burt Reynolds Park and many high-rise apartments and condo villages along with a trailer park or two. And scattered among this melange you'll find the Burt Reynolds Dinner Theatre. But a near definite NO to a "numbers" station!

For reference purposes the coordinates of the Jupiter Light, according to the US Coast Guard, are: latitude 26-56-09 and longitude 80-04-09!

The coordinates of The Village of Tequesta Police Department are: latitude 26-57-39 and longitude 80-05-40! These are the coordinates that appeared on their FCC license.

The street address for the Tequesta Police Department: 357 Tequesta Drive. This location is a couple of miles in a northwesterly direction from the inlet and Jupiter Light!

It escapes me as to why the Jupiter Light WAS NOT used as a reference point in the *MT* story. How close to the Jupiter Light? What direction from the Jupiter Light? I would very much hope that the aerial examination of this site revealed the famous Jupiter Light! And how come no aerial photos? Certainly the three circular HF antennas mentioned forming a triangle would have been interesting!

To have used the Jupiter Light or the two forks of the Loxahatchee River as reference points would have made things easier.

But just to the north of Jupiter Inlet or even to the north and then west on County Line Road in The Village of Tequesta could well be another story! And there is a remote possibility that some type of activity is happening just behind the Jupiter Light! Strange that an area once open to the public is now closed! And just behind the Jupiter Light you'll find the transmit tower for the 294 kHz "J" beacon.

There is, however, a mystery site across the street (north of Beach Road or C-707) from the Jupiter Light. It's the former site of a WWII Navy Intercept Station! It is said this site is now a part of the Cape Canaveral missile tracking network. Some say this is also the site of *Cape Radio*!

Tower of Power?

Clearly visible from Beach Road on this site is a tall tower! My source CLAIMS this is a 2182 kHz transmit/receive tower used by the U.S. Coast Guard, also a remote site for NMA Miami! I would not rule out the possibility of this tower being used for other types of interesting transmissions!

Near the top of this tower is a strange looking dome shaped device. Knowledgeable sources tell me this is a low altitude Radar for tracking drug smuggling aircraft! Similar devices are atop high-rise condos and other towers all along the South Florida Coast.

This site is just south and slightly to the east of Village Square Shopping Center on U.S.1 in Tequesta. Portions of this site are visible from the Hardee's parking lot across U.S.1 from Village Square. The Jupiter Light is also highly visible from this particular parking lot. This site, however, is located in Jupiter, rather than The Village of Tequesta.

Keep Out!

While searching this area, I was continually warned by various law enforcement officers to STAY AWAY FROM the site across from the Jupiter Light (north of the inlet)! I was once told that I might well have my (several bad words) blown off if I wasn't arrested first! Seems that the security people at this site have arrest powers and don't take kindly to people with cameras or frequency counters! Local law enforcement officers claim that even they WILL NOT set foot on this property!

While the majority of the buildings are well hidden behind dunes and dense underbrush, a few white buildings and two telephone poles can be seen from Beach Road. Obviously a dipole was "once-upon-a-time" strung between these two poles!

A radome is also partially visible. There is, however, no indication of a 2 GHz microwave antenna at this site! I suspect that it would be rather difficult to conceal a microwave tower at this particular location. *No trespassing* signs abound in this area!

There is, however, a 2 GHz microwave antenna at another site on County Line

The entrance to the tracking station on County Line Road.

Road about three miles or so from this Beach Road location. This particular microwave antenna has been tracked to another microwave site just about 20 miles to the north near Stuart, Florida on U.S.1.

From Stuart and about every 20 miles we have found Cape Canaveral microwave relay sites extending to Malabar, FL! And ALL of these microwave sites are clearly identified as being a part of the Cape Canaveral Air Force Station! RCA and Pan American World Systems are listed as operators on ALL of these microwave sites!

NOTE THAT IT HAS BEEN SUSPECTED THAT SOME "NUMBERS" TRANSMISSIONS EMANATE FROM MALABAR AS WELL AS PATRICK AIR FORCE BASE!

It would appear—from currently available evidence—that U.S. Customs, the USAF Eastern Test Range, Coast Guard and possibly the Navy's Atlantic Underwater Test and Evaluation Center (AUTEC) have facilities at this location on Beach Road just to the north of the Jupiter Light!

It is unknown as to just what link AUTEC has with its facility in the old Federal Building in downtown West Palm Beach or the facility at Palm Beach International Airport (PBIA)! RCA is, however, a contractor to the AUTEC facility at PBIA! A satellite system has replaced the HF system at AUTEC's PBIA site!

Who's The Landlord?

There is no available evidence to suggest that RCA either owns or leases this property across from the Jupiter Light or any properties in the Jupiter/Tequesta area! It is entirely possible, however, that RCA is one of the sub-contractors at this location. I have no problem, however, with the statement that RCA owns and leases to the Federal Government certain HF transmitters!

Let's take U.S.1 north from Beach Road to reach County Cline Road. You really can't miss it. It's clearly marked and The County Line Bar is where you make your turn to the west. Continue across the railroad tracks and past Tequesta Park on the right. You'll come to a sharp right turn just as soon as you pass the River Edge Club on your right. You'll now be headed north and very shortly on your left you'll pass the exclusive River Ridge community. No Flamingo pink here, friends. Just a lot of blue!

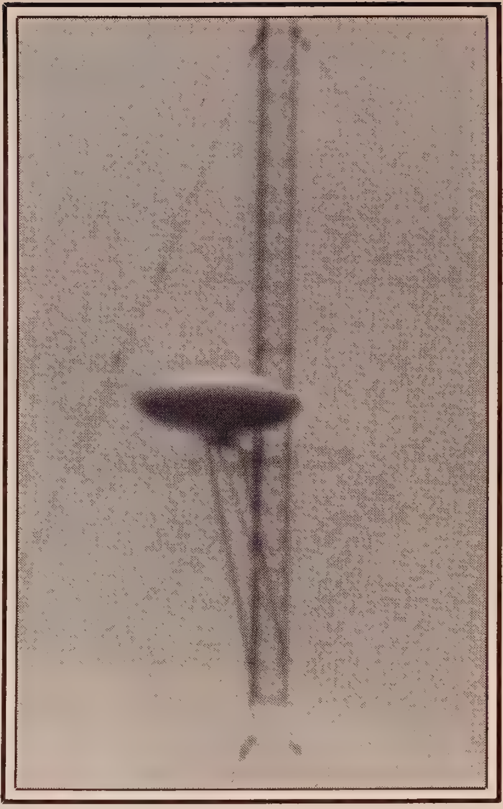
A short distance on the right side of the road is the South Martin County Volunteer Fire Department. And just past the fire station is a somewhat unbelievable site! It's the USAF Cape Canaveral Missile Tracking Station! You'll have traveled about two miles from the start of County Line Road as you come upon this site. What an awesome monstrosity to be located in such a ritzy and sedate country club area of Tequesta. And why such high visibility?

Rest assured that the residents of River Ridge are not at all happy about having to contend with a "beast" with five heads! And it's not an uncommon site to see at least one of these five dishes pointed directly at one of the exclusive residences across the street in River Ridge!

Friendly, But At Arm's Length

The USAF does want to be a good neighbor with this highly visible beast. They really, really do! They have seen fit to illuminate the entire complex at night with eerie green fluorescent security lights! This strange green lighting further adds to the ghostly and haunting qualities of Tequesta and County Line Road! And it's difficult to say exactly what evokes these feelings!

The entire area is cordoned off by a high chain link fence. Surveillance cameras



Telephoto view of the low altitude radar antenna mounted on the USCG's HF communications tower on Beach Road. This is north of Jupiter inlet and the Jupiter Light. Is it the 4670 numbers transmission site?

The Jupiter Light (right) is a famous local landmark usually used as a reference point, except in the early report of the (apparent) nearby "numbers" station. The tower for Beacon J (294 kHz) is at the left.

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abound and NO TRESPASSING signs are numerous. Security personnel are armed with .45 caliber and 9mm weapons! Turn into the entrance and ear piercing alarms can be heard several hundred feet away!

In addition to the five dishes, you'll find a HF dipole and radar. There's also a 2 GHz microwave link with a 800 MHz Yagi near the top of this microwave tower. This is pointed in a northwesterly direction.

Two HF towers are locted to the back and east of this site! Possibly these towers are the transmit facilities of *Cape Radio*. And maybe—just maybe—the 4670 kHz YL once made use of these towers!

Signs at this site clearly indicate that RCA and Pan American World Systems are the prime contractors of this site! While RCA does not own or lease this site, it's possible that they do own some of the transmitters or other equipment inside this complex.

The USAF leases this property that's located on Jonathan Dickinson State Park from the State of Florida! Scheduled completion date for this site is sometime in 1992! The area does, however, appear to be partially operational.

Some residents of River Ridge tell me that just a short time ago that "Deep Space Probe" signs were evident! I, however, only have knowledge of "Missile Tracking Site" signs!

Another usually informed source tells me that they (the USAF) track many other things besides missiles from this site. This source even went so far as to mention UFO's!

Martin County deputies tell me that under no circumstances are they allowed to enter this complex! Another law enforcement official stated that the only way they could enter this property was by permission from the Base Commander at Cape Canaveral! It would appear that those who live inside this complex are well prepared to handle any emergency! A park patrol officer did tell me that he has noticed two or three SERIOUS security problems! No further details were given.

Come Out, Come Out, Wherever You Are!

Next month we'll continue our snooping around for this 4670 spectre and take a look at portions of a somewhat sinister "numbers" letter that—to a degree—may explain SOME aspects of "numbers" transmissions! And there's a look at a SUSPECTED domestic five-digit site as well as a visit to another Florida MYSTERY SITE in Southwest Dade County that just MIGHT BE the home of KKN39 which is *supposed* to be near Washington.

"Numbers" and "numbers" sites. Think "shell game" when you hear these words! Learn why in the next issue of POP'COMM! THANKS.

Tequesta, I will return!

Time now for a Tecate and . . .

Havana Moon y Amigas
33458

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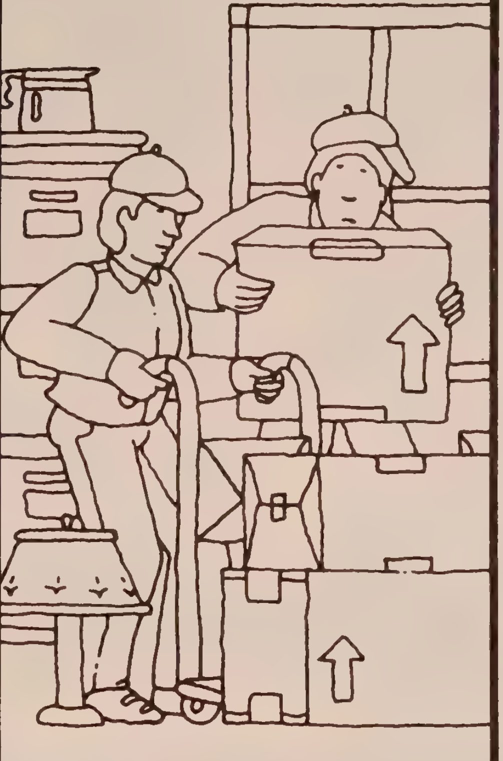

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Selected English Language Broadcasts

Fall—1988

BY GERRY L. DEXTER

Note: There are hundreds of broadcasts aired in the English language every day on the shortwave broadcast bands, many of them directed to North American audiences. This is a representative list and not intended to be a complete reference. While the list is as accurate as possible stations often make changes in broadcast hours and/or frequencies, often with little or no advance notice. Some broadcasters air only part of the transmission in English or may run English into the following hour. Numbers in parenthesis indicate a start time for English that many minutes past the hour. All times are UTC.

Time	Station/Country	Frequencies
0000	Radio Budapest, Hungary (30)	6110, 9520, 9585, 11910, 15160
	WRNO, Louisiana	7355
	WHRI, Indiana	7400, 9870
	Radio Austria International	9875
	REE, Spain	9630, 11880
	Kol Israel	9435, 11605, 12077
	Radio Havana Cuba	6090
	HCJB, Ecuador (30)	9720, 11775, 11910, 15155
	All India Radio	15110
	KVOH, California	9495
	Vatican Radio (50)	6150, 9605, 11780
	Radio Beijing, China	9770, 11715, 15435
0100	Radio Baghdad, Iraq	11775
	RAI, Italy	9575, 11800
	Radio Norway Intern'l. (Mon)	9615, 11865
	RCI, Canada (Sat/Sun)	9535, 9755, 11845, 11940
	Voice of Germany	6040, 6085, 6145, 9565, 9735, 11865
	KUSW, Utah	11965
	Radio Berlin Intern'l., E. Germany	6080, 9730
	REE, Spain	9630, 11880
	Kol Israel	9435, 11605, 12077
	Radio For Peace Int'l., Costa Rica	7375
	Radio Japan	5960, 11705, 15195, 17810, 17845
	Radio Prague, Czechoslovakia	5930, 6055, 7345, 9540, 9630, 9740, 11990
	Voice of Greece (30)	7430, 9395, 9420

Time	Station/Country	Frequencies
0200	Radio Finland International	15245, 17795
	Radio Baghdad, Iraq	11775
	Radio Norway Intern'l. (Mon)	9565
	Swiss Radio Intern'l.	5965, 6135, 9725, 9885, 12035
	Radio Netherlands (30)	6020, 6165, 9590, 9895
	Radio RSA, South Africa	6010, 9580, 9615
	WCSN, Maine	9852.5
	Radio Havana Cuba	6140, 9770
	Radio Sweden (30)	9695
	Radio Kiev, Ukraine SSR	7205, 11790, 13645. 15180
	RAE, Argentina	9690, 11710
	Radio Bucharest, Romania	5990, 6155, 9510, 9570, 11830, 11940
	Voice of Free China, Taiwan	5950, 5985, 7445, 9765, 11740, 11860, 15345
	Radio Tirana, Albania (30)	7065
	Radio Cairo, Egypt	9475, 9675
0300	Radio Sofia, Bulgaria	7115
	Radio France Intern'l. (15)	6175, 7135, 7175, 9550, 9790, 9800, 11670, 11995
	Voice of Germany	6010, 6045, 9545, 9605, 9700, 11785
	Radio RSA, South Africa	6010, 9580, 9615
	HRVC, Honduras	4820
	Voice of Greece (40)	7430, 9395, 9420
	Radiobras, Brazil	11745
	WRNO, Louisiana	6185
	KUSW, Utah	9815
	WHRI, Indiana	7355
	Radio Austria International	9875
	Radio New Zealand (45)	15150
	Radio Sweden (30)	11705
	Radio Japan	11840, 15195, 17810
	Radio Prague, Czechoslovakia	5930, 6055, 7345, 9540, 9630, 9740, 11990
	UAE Radio, UAE (30)	9640, 11940, 15435, 17775
	Voice of Turkey	9445, 17760
	TWR, Bonaire	9535
	Radio Moscow	6170, 7270, 9530, 9600, 9610, 9640
	Vatican Radio (10)	6150
	Voice of Free China, Taiwan	5950, 5985, 7445, 9765, 11745, 15345
0400	Swiss Radio International	6135, 9725, 9885, 12035
	WHRI, Indiana	7365
	WCSN, Maine	9870
	Radio Havana Cuba	5965, 6035
	RAE, Argentina	9690, 11710
	Radio Bucharest, Romania	5990, 6155, 9510, 9570, 11830, 11940
	Radio Beijing, China	9690
	Radio Botswana	4820, 7255
0500	Voice of Germany	5960, 6045, 6120, 9635, 9700
	KUSW, Utah	6155
	REE, Spain	9630
	Radio New Zealand	12045, 15150
	HCJB, Ecuador	6230, 9720, 11775
	Radio Japan	9505, 11840, 11870, 15235, 17810
	Radio Nigeria	7255
	FIBS, Falkland Islands	3958
	Radio Tirana, Albania (30)	9500
	Radio Netherlands (30)	6165, 9715
0600	Radio Sofia, Bulgaria (30)	9700, 11720
	WHRI, Indiana	9620
	WCSN, Maine	9495
	Voice of America	5955, 6040, 6060, 7170, 9670, 9715, 9770
	Radio Havana Cuba	9525
	ELWA, Liberia	4760
	Voice of Nicaragua	6100
	GBC, Ghana	4915
	Radio Korea	6060, 7275, 9570
0700	KUSW, Utah	6135
	HCJB, Ecuador	6130, 9610, 11835
	Radio Japan	11955, 15235, 17810, 21695
	KSDA, Guam	11700
	BBC	5975, 9410, 9640
	Radio Netherlands (30)	9630
0800	KNLS, Alaska	11860
	SIBC, Solomon Islands	5020, 9545
	WHRI, Indiana	7355, 9510
	BRT, Belgium (M-F)	11695, 15510
	KTWR, Guam	11805
0900	RCI, Canada (M-F, 30)	5960, 9755
	HCJB, Ecuador	6130, 9745, 11935
	Radio Japan (30)	9525, 11840, 11875, 17755, 17810
1000	Radio New Zealand (30)	6100, 9540
	Voice of America	5985, 7230, 9760, 11715, 15160, 15425
	All India Radio	11860, 11920, 15155, 15335
	Radio Moscow World Service	15150, 15225, 15460
	Radio Norway (Sun)	11870, 15235, 15400
	Radio Netherlands (30)	6020, 9675
1100	TWR, Bonaire (10)	11815, 15345
	Radio Beijing	15455
	Voice of Vietnam	7430, 15010
	Radio Finland	11945, 15325, 15400
	Radio Nepal (15)	5005
	NBC, Papua New Guinea	4890
	Radio Norway (Sun)	9590, 15185, 15335, 17780
	Swiss Radio International	11935, 13685, 15570, 17830
	KUSW, Utah	9850
	WHRI, Indiana	5995, 11790
	Rado Bangladesh (45)	15255, 17740
	Radio Japan	6120, 11815
	Radio Pyongyang, North Korea	6576, 11735
1200	Radio Finland	11945, 15400
	Radio Norway (Su)	15165, 15310, 17780, 21700

Time	Station/Country	Frequencies
	RCI, Canada	17820
	Radio France International (45)	9805, 11670, 15155, 15195, 15365, 17720
	WCSN, Maine	5980
	Radio Austria International	15320
	Radio Bangladesh	15525, 17870
	RCI, Canada (M-F)	9625, 11855, 17820
	Radio Sweden (30)	15190, 21690
	Radio Pyongyang, North Korea	9600, 9977
	Radio Tashkent, Uzbek SSR	7275, 7325, 9540, 9600, 11785, 15460
	Radio Beijing, China	11715, 15130, 15455
1300	Radio Finland	11945, 15400
	Radio Norway (Sun)	9590, 15310, 17810, 21700
	Swiss Radio Intern'l. (30)	11695, 13685, 15135, 15570, 17830, 21695
	WHRI, Indiana	9455
	BRT, Belgium (30)	15510, 15590
	All India Radio (30)	9545, 11810, 15335
	Radio Pyongyang, North Korea	9325, 9345
	UAE Radio, UAE (30)	11955, 15435
	Vatican Radio (45)	6248, 7250, 9645, 11740
	Radio Pakistan	9475, 11615, 13675, 15605
	Voice of Vietnam (30)	9480, 15010
1400	WCSN, Maine	5980
	Radio Sweden	15345, 15390
	Radio Japan	9695, 11815, 11870
	Radio Moscow World Service	5905, 7160, 7300, 7345, 11840, 11900, 15150, 15460
	KSDA, Guam	11700, 11980
	Radio Korea	9510, 9750, 15575
1500	Radio Veritas Asia, Philippines	11820, 15220
	WRNO, Louisiana	11965
	WHRI, Indiana	15105, 21655
	KTWR, Guam	9820
	Radio Yugoslavia (30)	7240, 15240, 15415
	BCC	12095, 15070
1600	KNLS, Alaska	9750
	RTM, Morocco (30)	17595
	Radio France International	11705, 17620, 17795
	KUSW, Utah	15225
	WCSN, Maine	21640
	UAE Radio, UAE	11730, 11955, 15330, 17865
	Radio Pakistan	9475, 9780, 11615, 11625, 13675, 15135
	WMLK, Pennsylvania	9465
1700	WRNO, Louisiana	15420
	Radio Moscow World Service	7440, 9580, 9640, 9665, 11840, 11900, 12010, 12050, 15150, 15460
	Radio Japan	9505, 11705, 11815
	Kol Israel	11585, 11655, 13750

Time	Station/Country	Frequencies
	WYFR, Florida	13695, 15565, 17845
1800	WHRI, Indiana	13760, 17830
	WCSN, Maine	15390
	RCI, Canada (M-F 30)	7235, 9555, 11945, 15325, 17875
	Radio Korea	15575
	Radiobras, Brazil	15265
1900	KUSW, Utah	15400
	Kol Israel	9010, 11605, 11700, 13625, 13725, 15485, 15585, 17685
	Radio Afghanistan	7160, 9640
	HCJB, Ecuador	11790, 15270
	Radio Moscow World Service	7440, 9560, 9580, 9640, 9665, 11840, 12010, 12030, 12050, 13605
	Radio Jamahiriyah, Libya	15450
	VOIRI, Iran (30)	9022
2000	WCSN, Maine	15390
	Radio Havana Cuba (40)	11725, 15340
	Radio For Peace Int'l, Costa Rica	13660
	All India Radio	7412, 9755, 9910, 11620, 11860
	KVOH, California	17775
	Radio Yugoslavia	5980, 7240, 9620
	Radio Korea (30)	15575
	BBC	12095, 15070, 15260, 15400, 17760
2100	Radio Cairo, Egypt (15)	9900
	Swiss Radio International	9885, 12035, 15570
	WRNO, Louisiana	13760
	WHRI, Indiana	9770
	Radio Berlin Intn'l, E. Germany	6125
	Kol Israel (30)	11605, 12077, 13625, 13725, 15585, 15640
	Radio Kuwait	11665
2200	KUSW, Utah	15580
	WCSN, Maine	15300
	RCI, Canada	5960, 9755
	RAE, Argentina	6060, 9690, 11710
	Voice of Turkey	9445, 17760
	Radio Yugoslavia (15)	5980, 7240, 9620
2300	Radio Sofia, Bulgaria	9700, 11720
	Radio Budapest, Hungary (30)	6110, 9520, 9585, 9835, 11910, 15160
	BRT, Belgium (30)	9925, 11695
	RBI, East Germany (45)	6080, 9730
	Kol Israel	9435, 11605, 12077
	Radio New Zealand	15150
	RCI, Canada	5960, 9755, 11730
	Radio Sweden	9695, 11705
	Radio Kiev, Ukraine SSR (30)	5980, 7165
	Radio Japan	11800, 11815, 15195, 15230, 17810
	Radio Pyongyang, North Korea	11735, 13650
	TWR, Bonaire (25)	15355
	Radio Jamahiriyah, Libya (30)	6155, 11815
	Radio Korea (30)	15575

Radio Free America

A "Red, Right And Blue" Political Pirate

BY DON JENSEN

The thin wisp that curled up from the charring deck was symbolic. The Rev. Dr. Carl McIntire's plans for Radio Free America were going up in smoke.

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The wing, politically, was far right; the prayer, fundamentalist Presbyterian.

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Time	Station/Country	Frequencies
	RCI, Canada	17820
	Radio France International (45)	9805, 11670, 15155, 15195, 15365, 17720
	WCSN, Maine	5980
	Radio Austria International	15320
	Radio Bangladesh	15525, 17870
	RCI, Canada (M-F)	9625, 11855, 17820
	Radio Sweden (30)	15190, 21690
	Radio Pyongyang, North Korea	9600, 9977
	Radio Tashkent, Uzbek SSR	7275, 7325, 9540, 9600, 11785, 15460
	Radio Beijing, China	11715, 15130, 15455
1300	Radio Finland	11945, 15400
	Radio Norway (Sun)	9590, 15310, 17810, 21700
	Swiss Radio Intern'l. (30)	11695, 13685, 15135, 15570, 17830, 21695
	WHRI, Indiana	9455
	BRT, Belgium (30)	15510, 15590
	All India Radio (30)	9545, 11810, 15335
	Radio Pyongyang, North Korea	9325, 9345
	UAE Radio, UAE (30)	11955, 15435
	Vatican Radio (45)	6248, 7250, 9645, 11740
	Radio Pak	9475, 11615, 13675
	Voice of V	
1400	WCSN, M	
	Radio Sw	
	Radio Jap	
	Radio Mo	
	KSDA, G	
	Radio Ko	
1500	Radio Ve	
	WRNO, L	
	WHRI, In	
	KTWR, G	
	Radio Yu	
	BCC	
1600	KNLS, Al	
	RTM, Mo	
	Radio Fra	
	KUSW, U	
	WCSN, M	
	UAE Radi	
	Radio Pak	
	WMLK, F	
1700	WRNO, L	
	Radio Mo	
	Radio Jap	
	Kol Israel	11585, 11655, 13750

Time	Station/Country	Frequencies
	WYFR, Florida	13695, 15565, 17845
1800	WHRI, Indiana	13760, 17830
	WCSN, Maine	15390
	RCI, Canada (M-F 30)	7235, 9555, 11945, 15325, 17875
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Radio Free America

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BY DON JENSEN

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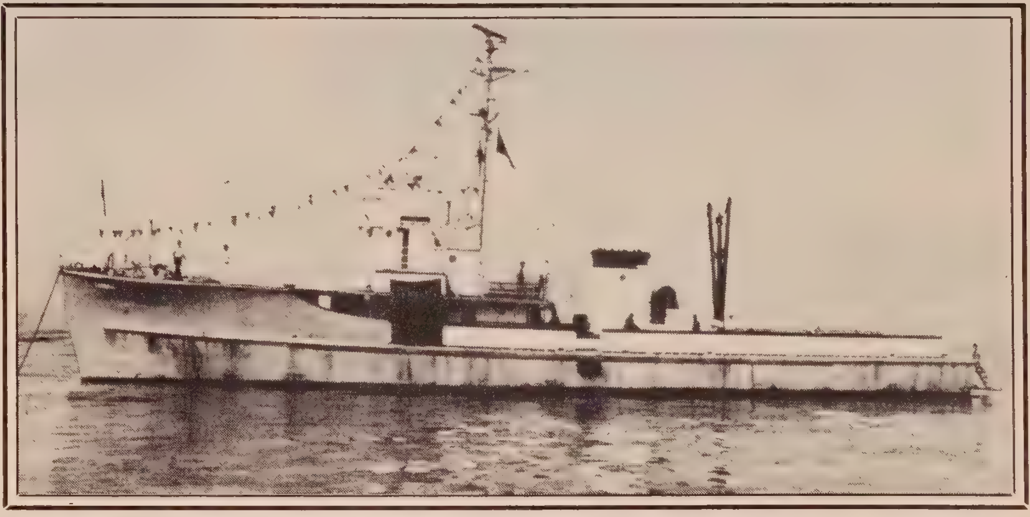
To the controversial minister, Radio Free America was a means to end federal regulation of braodcasting by the FCC, which had pulled his AM and FM station license after an avalanche of complaints that he'd violated broadcasting's "fairness doctrine."



Here's a nice look at the "Columbus" a converted WWII minesweeper. During September 1973, it became home of Dr. McIntire's now infamous Radio Free America.

Though McIntire was long on plans and hopes, the station's life was short. Ignoring a couple of earlier and brief equipment tests, Radio Free America went on the air for the first time—and last—time on Sept. 19, 1974.

Everything had moved too fast. There were still bugs in the broadcasting setup. RF energy from the 10,000 watt AM transmitter during tests had caused a transistorized console to virtually explode in flames.

And once broadcasting began, the transmission feed line to the ship's end-fed "V" antenna began arcing. At the point where the line passed through a hole in the deck, the oak began to smoulder and char. Hurriedly, a station engineer "throttled back" the transmitter power to keep from setting the wooden vessel on fire.

Two days later, as the repaired Radio Free America was preparing to return to the air, came the crusher. A federal judge issued an injunction ordering the seagoing station not to resume broadcasting.

McIntire, with the stubborn determination of his Scots forefathers, had been willing to do battle with the Federal Communications Commission over what he saw as his constitutional right to free speech. But his respect for the Constitution would not let him directly defy the nation's legal system. He took his case to court instead.

But it had been another court decision nearly four months earlier—Brandywine-Main Line Radio vs. the FCC—that started the whole business in the first place.

On May 29, 1973, the U.S. Supreme Court announced it would not upset an FCC decision denying renewal of the broadcasting license of WXUR AM and FM, a set of Pennsylvania stations operated by mcIntire's Faith Theological Seminary.

A longtime conservative gadfly, McIntire had been defrocked by mainstream Presbyterians as far back as 1935, for "causing dissension" in the church with his fiery attacks on liberal "modernism."

The preacher had set out on his own, his Bible Presbyterian Church in Collingswood, NJ, becoming the nucleus of a splinter denomination that grew to include congregations across America.

In 1957, the self-styled No. 1 anti-communist began a daily series of radio broadcasts, the "Twentieth Century Reformation Hour," on which the Rev. McIntire expounded a volatile mixture of fundamentalism and hawkish patriotism, while denouncing nearly every other "ism" in sight, from Catholicism and ecumenism to socialism and communism. The programs were carried by more than 600 stations nationally.

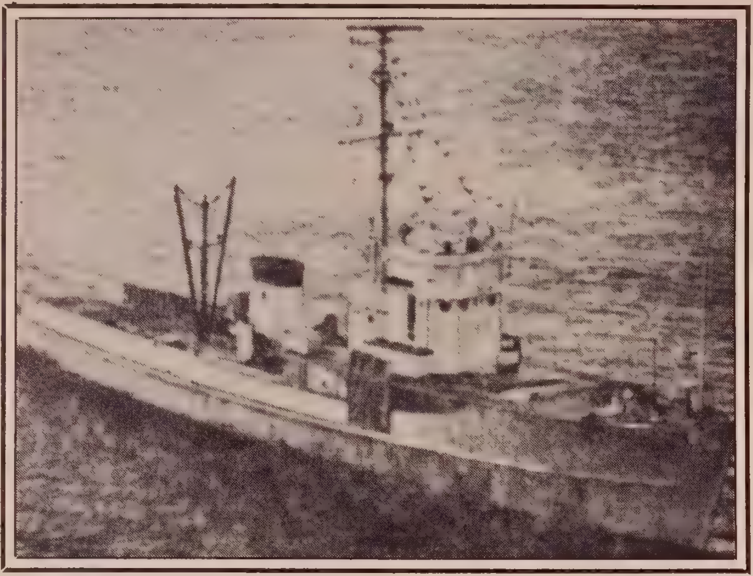
Unable to find a station willing to carry the broadcast in his own theological backyard, in 1965, he acquired his own, WXUR in the Philadelphia surburb of Media. According to FCC records, almost immediately the station began to broadcast not only McIntire's "Twentieth Century Reformation Hour," but also a series of ultra right wing programs by the Rev. Billy James Hargis, Dan Smoot, Kent Courtney and multi-millionaire H.L. Hunt, and others.

So when WXUR's broadcasting license came up for renewal, no less than 19 different organizations petitioned against it, calling the station's programming inflammatory, racist, anti-Catholic, anti-Semitic and "weighted on the side of extreme right-wing radicalism."

After long months of hearing, then court appeals, the FCC ordered WXUR shut down. It's license, in the end, was revoked for misrepresentation of programming plans in the original application. The final blow came when the federal Supreme Court refused to intervene to save the station.

And so at exactly midnight, July 6, with a Titanic-like playing of "Nearer My God To Thee," WXUR slipped beneath the radio waves and vanished forever.

Now it was necessary for McIntire to move fast. Across the nation, scores of stations which had aired his taped "Twentieth Century" program were dropping the show. It had become an uncomfortably hot potato. Station spokesmen told McIntire,



Radio Free America, was strategically anchored just outside the three-mile limit off Cape May, NJ.

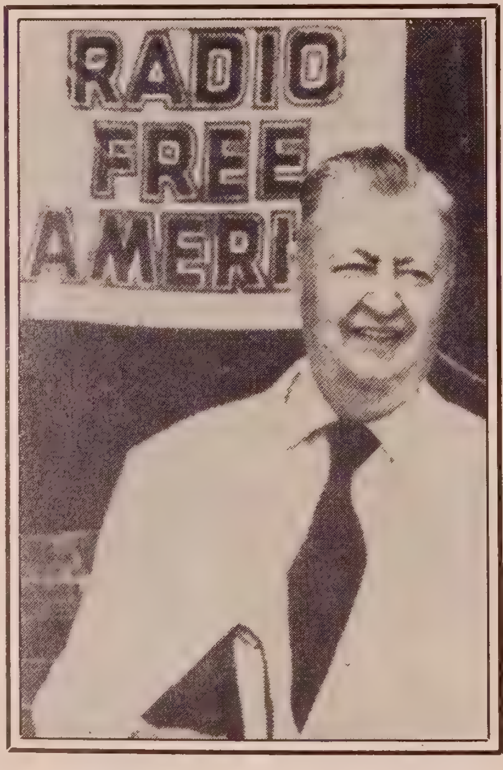
Dr. McIntire behind the mike while aboard the Columbus.

he said, that they were afraid that their broadcasting licenses, like WXUR's, could be revoked if they continued to air the preacher's programs.

The loss of outlets was serious. He could lose those faithful listeners who had been contributing $30 million a year into the fundamentalist ministry.

But McIntire had a plan, which he'd revealed a month earlier, just after the Supreme Court had dealt the death blow to WXUR.

"We're considering moving the equipment of radio station WXUR to a ship off Cape May beyond the three-mile limit," he had announced. "We are determined that our views are entitled to be heard in this area."



Dr. McIntire, standing outside the Cape May headquarters of Radio Free America.

The most important part of the coverage area was, of course, the District of Columbia, a hundred miles away or so, where Congress was still in session that summer. For McIntire needed Radio Free America on the air and audible to nag the lawmakers into intervening on behalf of his cause.

Having announced his pirate radio plans, the preacher began a game of cat and mouse with the feds. When he lined up a suitable ship for his station, a 160-foot drydocked freighter in Trinidad, the U.S. State Department promptly applied pressure and the Trinidadian government disallowed the sale. Another deal elsewhere was similarly scuttled.

Finally, a McIntire supporter in Florida secretly bought for $40,000 the WWII-vintage, wooden-hulled ex-minesweeper, "Oceanic." The buyer then transferred the 300-ton ship once used by oceanographer Jacques Cousteau to McIntire's ministry.

Docked at the evangelist's Florida conference facility, the Reformation Freedom Center at Cape Canaveral, the 138-foot vessel was rechristened the "Columbus" and outfitted with a $6,000 used 10 kW RCA AM transmitter.

McIntire's volunteer broadcasting engineers—who prefer to remain anonymous even today for fear of jeopardizing their FCC-issued licenses—were stunned to find a wooden ship, not a steel-bottomed vessel, had been chosen for Radio Free America. Without a ground—to water, in this case—how would the transmitter's signal be radiated efficiently? Trying to make the best of it, they installed two thick copper straps under the wooden hull to ground the ship.

Clandestine radio was nothing new to one of the engineers. Back in 1967, "John Jones", while a technician for a fully legit station in the New York area, had been assigned to a remote taping session. Record controversial congressman, the Rev. Adam Clayton Powell at a rally at his Abyssinian Baptist Church in Harlem, he was told. He did, but later that night at home, after a few beers, "Jones" fired up his ham radio transmitter on 3,800 kHz and replayed parts of Powell's speech. Playfully, he periodically banged away on an improvised gong—a kitchen pot—with a wooden spoon and identified his station as "Radio Free Harlem."

He discovered the next day, to his horror, that the FCC had monitored his impromptu broadcast and taken it in deadly earnest, believing his prank to have been a militant clandestine station. And, he learned later, monitors had come dangerously close—right to his block—to pinpointing the illegal broadcast before he had tired of the play and shut down Radio Free Harlem.

That close call didn't deter him from helping McIntire with his station, but he kep a particularly low profile.

"I am going into Radio Free America to back my government down, and if need be, I'll be happy to go to jail for freedom from tyranny," the florid, perspiring minister announced to a band of followers and the press on the wide Victorian porch of his grand old Christian Admiral Hotel at Cape May.

In a rented fishing boat, appropriately named, the "Wild Goose," McIntire and his entourage set out for the offshore station and its inaugural broadcast.

Then it was discovered that there were nine persons over the legal limit on board and the "Wild Goose" had to return to the dock, where a sweating, perplexed McIntire used his bullhorn to persuade some of his followers to get off.

To make sure that the radio ship was not molested by evil forces, the preacher announced that it had a cache of rifles and ammunition aboard to prevent "the Russians or anybody else trying to tinker with our broadcasting."

Back on the Christian Admiral's pillared porch, those left behind pointed out to sea where, not far from the "Columbus," several fishing tugs could be seen. Soviet spy trawlers, the faithful muttered worriedly!

But trouble, that day, came not from Commie hoards, but rather from the 22-year-old captain of the chartered boat. He'd agreed merely to take McIntire's group out to the "Columbus." But would not let them board the radio ship. Custom regulations, he announced, barred him discharging passengers on the high seas!

"No way, man!," the young skipper, Ronald Lasky told McIntire. "You may be a reverend, but you don't know anything about boats and marine law. I'm a captain and I don't know anything about religion, but I know about boats and ship!"

That ended broadcasting plans for the day. After circling the radio ship a few times, the "Wild Goose" chase ended and the disappointed group returned to shore.

It was just as well, since Radio Free America still was without an antenna and the control room equipment was acting up.

Originally, the station's frequency was to have been 692 kHz, a European channel, but only 2 kHz away from the old WXUR slot. This made sense to the non-technical McIntire. It was close enough to pick up old listeners but at the same he was forswearing FCC authority to regulate his channel.

His engineers worried, however, that the offset frequency was uncomfortably close to a Canadian medium wave outlet, CFB, Montreal, on 690 kHz. Its use would cause an international howl, both audio and diplomatic.

So Radio Free America's three-man technical staff set out on a secretive, early morning mission to persuade the stubborn preacher that a different frequency was essential. At about 2 a.m., they arrived at his unpretentious home to find, not surprisingly, the McIntire household asleep. Flashing the headlights on the bedroom window failed to rouse the minister, so finally, throwing caution to the wind, the desperate engineers, leaned on the auto horn! After some minutes they succeeded in waking McIntire and half of southern New Jersey!

He came, sleepily to the door, in nightclothes and slippers, but ever mindful of his dignity, with a suit coat over his pj's.

At the predawn conference, the group settled on 1160 kHz as the primary frequency, with 1608 kHz as a backup.

1160 kHz, a clear channel, supposedly with minimal interference on the eastern seaboard after WJJD, a Chicago daytime-only station signed off. After that, KSL, a Salt Lake City broadcaster, was the only co-channel user.

The technicians, however, really preferred 1608 kHz, which, being outside the regular AM band, promised to be free of interference. A study had shown about 80 percent of all radios were able to tune this slightly out-of-band channel.

A brief open carrier transmitter test on Sept. 13 burned up the solid state console board. It was replaced with an old tube-type unit and more tests were conducted on Sept. 16. Everything worked, more or less. Radio Free America was ready to broadcast.

About midday, Sept. 19, wearing an admiral's cap, the Rev. Dr. Carl McIntire stepped out of the cabin of the radio ship into the bright sunlight. Because of some uncertainty as to whether the high seas began at the three-mile or 12-mile mark, he'd instructed the skipper to move the "Columbus" another nine miles off shore.

On the forecastle of the radio ship he knelt in prayer.

"Our Father, may the transmitter be operating. And God, give us WXUR back!"

12:23 p.m.—McIntire was back in the radio cabin, before a microphone.

"This is Radio Free America," he proclaimed! "The silence of the sea is broken at 1160 on the AM dial!"

The radio preacher was in his element now. As he put it later, he "got our spiritual emphasis in, and our freedom emphasis." He urged listeners to send money to support the new station, rejecting the term "pirate" which the press had hung on Radio Free America.

"We are not lawbreakers!" McIntire insisted.

Then he left the studio and stepped out on deck for a bit of ocean air, while pink-robed Bishop V.J. Stephens of Kerala, India, took over the mike.

Knifing through the blue Atlantic swells came a sleek Coast Guard cutter from the Cape May station. It hovered menacingly near the radio ship. The FCC later said it had an agent aboard and it was necessary to approach closely "to provide easy monitoring" of the station.

Medium wave DX'ers as far away as Cape Cod weren't having trouble hearing the broadcasts, however. And reception in Washington, D.C., where McIntire wanted so much to be heard, was not bad, according to reports.

But then the antenna feedline began its arcing. The engineers, fearing it might actually ignite the ship's decking, reduced the transmitter's power. The station's coverge area shrank accordingly. By 9 p.m. the signal was very weak. And at 10:14 p.m., Radio Free America left the air.

The Rev. McIntire was pleased with the day's efforts.

"We did it! It's going! It's working," he said. "The Lord is giving us the platform we wanted!"

Not so happy though was Seymour Abramson, vice president of station WHLW in nearby Lakewood, NJ. The seagoing broadcaster was interfering with his station on 1170 kHz, he complained in telegrams to McIntire and the FCC.

McIntire was sympathetic, responding, "There is no dearth of wavelengths. We do not want to interfere with any other station." Radio Free America would move to 1608 kHz, he said. "That's way up at the top of the band. There's nobody up there." He promised to have his station back on the air the following week.

The following day, however, the U.S. Justice Department, at the request of the FCC, went to federal court in Camden, NJ, to obtain a temporary injunction from Judge Mitchell H. Cohen, ordering McIntire's radio to stay off.

McIntire huffed and puffed, but he did not violate the court order. He threatened to subpoena Central Intelligence Agency officials to prove that the spy agency also used the high seas for unlicensed broadcasts elsewhere in the world. And he announced that he would acquire a new radio ship, under a foreign flag, claiming then the FCC could not legally touch him.

But in the end he did neither and Cohen, on Oct. 26, refused to lift the temporary restraining order. On Feb. 22 of the following year, the federal judge made permanent the injunction barring broadcasts by the offshore Radio Free America. A spokesman for McIntire said the decision would be appealed.

That was just about it for Radio Free America. But McIntire wasn't quite finished. On the first Saturday of April, 1974, he staged a First Amendment March down Washington's Pennsylvania Avenue to protest what he called censorship of radio and TV stations by the Federal Communications Commission.

But McIntire had gained allies in Congress, one of the most prominent of whom, North Carolina's Sen. Sam Ervin, called for the abolishment of what he called the "outmoded" FCC fairness doctrine. He noted there were over 7,300 U.S. stations on the air. The Fairness Rule, valid when there were few broadcasters on the air, was no longer needed to ensure the airing of a diversity of viewpoints, Ervin said.

But it wasn't until the election of President Ronald Reagan that things began changing. The broadcast industry began pushing harder for deregulation. New FCC commissioners looked at the fairness doctrine and urged Congress, unsuccessfully, to repeal it, saying it "chills First Amendment speech" rather than serving the public interest.

In 1986, a federal appellate court held that the longstanding rule wasn't even a statutory requirement. And, last year, after the president vetoed a measure that would have written it into law, the FCC simply abolished the fairness doctrine.

Some in Congress claim the issue isn't dead, but for now, at least, McIntire's view prevails.

The conservative minister, now in his early 80s, is healthy and active, preaching regularly at the Bible Presbyterian Church in Collingswood, where he lives quietly. And he still tapes his radio broadcasts, though for a presumably smaller audience than in past years.

McIntire never got his WXUR license back. And the original Radio Free America—after its single high seas broadcast—never returned to the air, although on ultraconservative radio network (via satellite distribution) has recently gone on the air to carry on the name of Radio Free America.

Tracking Godzilla: The Contra Connection

You Asked For More on Low Band Skip DX. Here's More!

BY HUGH STEGMAN, NV6H

"All units, check for open mike."

Nobody remembers which fire department dispatcher heard it first. It was a blistering, full-quieting carrier, and it played havoc with emergency fire and rescue radio on 33.48 MHz. Wherever this channel was used in the United States, the same thing happened. In Athol, Massachusetts, new equipment was useless for hours at a time. In Los Angeles, an expensive data system was disrupted. This open carrier continued for months, through the entire winter of 1981.

As if the radio techs didn't have enough to worry about, things only got stranger. By 1982, the stuck carrier was gone, but police from 39.48 MHz were coming through on the fire channel, some six MHz lower. Signals spread far beyond the normal range of low-powered mobiles. In Los Angeles, distant desert pursuits were heard at the beach. The county sheriff had always wanted coverage this good, but this was not the way to get it!

On other days, the fire channel was crushed by a truly horrendous variety of monster-flick noises. One listener, noting these ominous buzzes, crunches and hisses, immediately dubbed the offending transmitter "Godzilla". The name sticks to this day.

"Godzilla" quickly attracted the attention of low-band VHF DX'ers. Listeners devoted to this unusual hobby-within-a-hobby are used to such wierdness. They are attracted by a good mystery. Even so, "Godzilla" has remained the most mysterious of all. Soon traced to a super-power repeater somewhere in Costa Rica, the trail has led some theorists as far afield as the battle zones in southern Nicaragua, and the supply lines of a covert war. Since this repeater is still in use today, these mysteries are still open for investigation by listeners.

It was determined almost immediately that "Godzilla" was simple, F2-layer "skip". 1981 came during a solar peak, and this low-VHF skip was very strong. Even so, the repeater had to be running far too much power. "Godzilla" had breath of fire, but very poor ears.

As a variety of DX'ers compared notes and tapes, mostly through a California column edited by skip fanatic Mike Britt, the actual frequency was shown to be 33.475 MHz. The "input" frequency, where the beast listened without benefit of tone protection, was thus 39.475. (In all cases, the 5 kHz difference can be ignored, as it only adds slight distortion.) This input was so close to the 39.48 MHz police channels that any skip from them was repeated throughout North America, again by skip. Yes, this was a classis, two-way, repeater path. Similar ones have been heard on other frequencies.

Chuck Robertson, an Illinois listener with a good setup, was among the first to discover identical systems on 33.675 and 33.875 MHz. While these lacked the "Godzilla" noises, they too repeated any 39 MHz police signals reaching their unprotected inputs. Even simple scanners were getting action from Haiti clear to California, plus whatever Spanish was being spoken by the Costa Ricans themselves.

At first, the Spanish language traffic from the primary users of these monsters was considered something of an irritation. It just stepped on the U.S. skip, and never seemed to be very interesting. Mostly, it was just boring, business conversation.

However, something about this activity puzzled even native Spanish speakers. By spring of 1984, when local use of "Godzilla" peaked, much of the traffic seemed to lack content. A female dispatcher made a lot of calls, but never raised anyone. People talked, but not to each other. Lines often sounded more like a bad script.

Shortwave listeners are used to this kind of traffic. A current example may be found among the man small nets that operate with total impunity on out-of-band radios, usually between 6.5 and 8 MHz. While most are undoubtedly fishing boats, a few are something else.

The traffic on "Godzilla", along with some on the other two repeaters, was something else. Many people, including this author, spent days searching atlases and air charts for place names they'd heard. Very few were ever found.

Though many people had the same idea at the same time, Mike Britt did the most research, and spent months playing tapes for natives of the region. In early 1984, he came up with a startling conclusion.

According to this theory, the three re-

Currently Active 33 MHz Super Repeaters

As heard by Chuck Robertson, Illinois, and Hugh Stegman, California.

Output	Input	Traffic
33.425	39.425	Spanish/alert tones & business traffic
33.475	39.475	Repeats 39.48 MHz U.S. police radio
33.525	39.525	Repeats 39.52 MHz U.S. police radio
33.625	39.625	Spanish/business traffic
33.675	39.675	Spanish
33.825	39.825	Godzilla-like noises/kerchunking
33.875	39.875	Repeats 39.88 MHz U.S. police radio

Scanners lacking capability for programming these frequencies will still receive clear signals on the even channels, as they also lack sharp selectivity.

peaters were, and perhaps still are, a covert supply netowrk for the "southern front" Contras operating in Costa Rica. These groups, which sought the overthrow of the Nicaraguan government, controlled most of the border between these two countries in the years before 1985.

While this seems a bit far-fetched, the evidence given by Britt remains persuasive. 33.475 MHz sounds like a ranching operation, but some of that traffic could indeed have been coded supply orders. The same voices were heard on 33.675, supposedly a lumber company. 33.875 sounded like a medical aid channel.

While this operation was not part of the later "Iran/Contra scandal", at least some of the same CIA "cargo kickers" were almost certainly involved. Also, a few of the hired pilots have recently been accused of moonlighting as drug smugglers.

A *Newsweek* story of the period described the use of private ranches in this enterprise. The owners, including some Americans, gave at least moral support. Could they have lent some of their radios as well?

In the most significant intercept, Britt heard a radio operator giving traffic from "La Penca". This military air strip, just inside Nicaragua, was at that time a headquarters for the charismatic Eden Pastora.

Pastora, the notorious "Comandante Zero", directed 4500 loyal troops. He was a popular Sandinista general who took to the hills after a factional dispute. Although he scored some impressive anti-Sandinista victories, he was far too independent for this proxy war. His Democratic Revolutionary Alliance ("ARDE", in a play on Spanish for "burning"), never received as much U.S. aid as some other groups.

The best account of "Comandante Zero" at work appears in *Time* magazine of April 30, 1984. He is described as giving orders, " . . . over a single radio channel." This supports the idea that he lacked the sophisticated tactical equipment being given the northern alliance. Even even some overpowered, under-engineered and conspicuous repeaters would have been good for something. Less essential traffic would not tie up the busy command control channel.

Unfortunately for radio listeners trying to solve this mystery, solar activity and ARDE both declined. The VHF skip grew weaker. Meanwhile, Pastora refused to join a Contra alliance being promoted by U.S. interests. His meager aid was cut off.

On May 30, Pastora called a press conference to protest this move. As journalists leaned closer, a booby-trapped tape machine blew up. "Comandante Zero" was wounded, and an American reporter was killed. Though many suspect the CIA, there is no proven U.S. link to this bombing. It, too, remains a mystery.

ARDE was beaten back and dispersed. "Godzilla" was silenced, not by force but by low solar activity. The 33 MHz Contra connection remained unproven. Was it just another unsolved radio mystery?

Perhaps not. In 1988, the low-VHF skip has returned. Chuck Robertson has again heard a loud, if somewhat better behaved, repeater on 33.475 MHz. Others have confirmed that radio use in the region is increasing. There appears to be some sort of band plan here, with several new super repeaters on the air. All have outputs on 33 MHz, with the distinctive -25 and -75 channels. Since the inputs are exactly six MHz higher, the U.S. police communication is again being repeated. As the solar activity continues to pick up, these powerful radios should soon be audible on scanners throughout North America.

What will be heard this time? Were these really just business repeaters all along? Were their users just people who hired the wrong engineers? Will "Godzilla" stomp the fire departments again?

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CIRCLE 50 ON READER SERVICE CARD

Tracking Down Olde Tyme Radio

Under All That Dust Are Interesting Stations

BY ALICE BRANNIGAN

All aboard! Hope you didn't miss the train when, in the September issue, we tagged along on an early 1930's broadcasting experiment aboard a speeding train running between Baltimore, MD and Washington, DC. Let's hold that thought a little longer as we explore several other strange 1930's broadcasting installations aboard trains.

Like, station KIED. In 1933, when Warner Brothers was bringing out its Warner Baxter and Ruby Keeler musical *Forty Second Street*, it came up with a novel publicity stunt. A train, carrying the film's stars, would leave from Hollywood and chug east towards New York's 42nd Street, where it would be met by the news media and (hopefully) many members of the public.

So that the train, prior to its arrival in New York, could rack up publicity en route, many stops at cities along the way were scheduled. This whistlestop tour would permit the stars to wave to the crowds at each station, as well as take photos with local politicians, theatre owners, and business leaders. This special train also contained its own radio station, KIED, on 1518 kHz with 250 watts.

The frequency was just a tad above the high frequency end (1500 kHz in those years) of the AM broadcasting band. While it was possible for the public to directly monitor KIED, it was also hoped that local radio stations would rebroadcast KIED over their own facilities. KIED's programs were sent out, therefore, while the train was motionless. KIED presented a large helping of songs from the film (including the title song, plus *Shuffle Off to Buffalo* and *You're Getting to Be a Habit with Me)* plus live statements by, and interviews with, various people connected with the film.

The next time the idea of broadcasting from a stationary train came down the pike was in 1937. That's when 50 watt Australian station 3YB (1060 kHz) commenced its career under the ownership of the Mobile Broadcasting Service, Melbourne.

The idea was to bring local radio to several communities that had no regular stations. For one week at a time, four hours per day, station 3YB would fill this gap with music, news, features, and commercials. Then it would lower its antenna and roll on to the next town along its route through Victoria.

Australian broadcaster 3YB was located in this railroad car. That's the antenna system strung out above the roof.

With the exception of changes in the news bulletins, 3YB's programs remained basically unchanged for each stop on its route, although all new programs were created at the beginning of every tour.

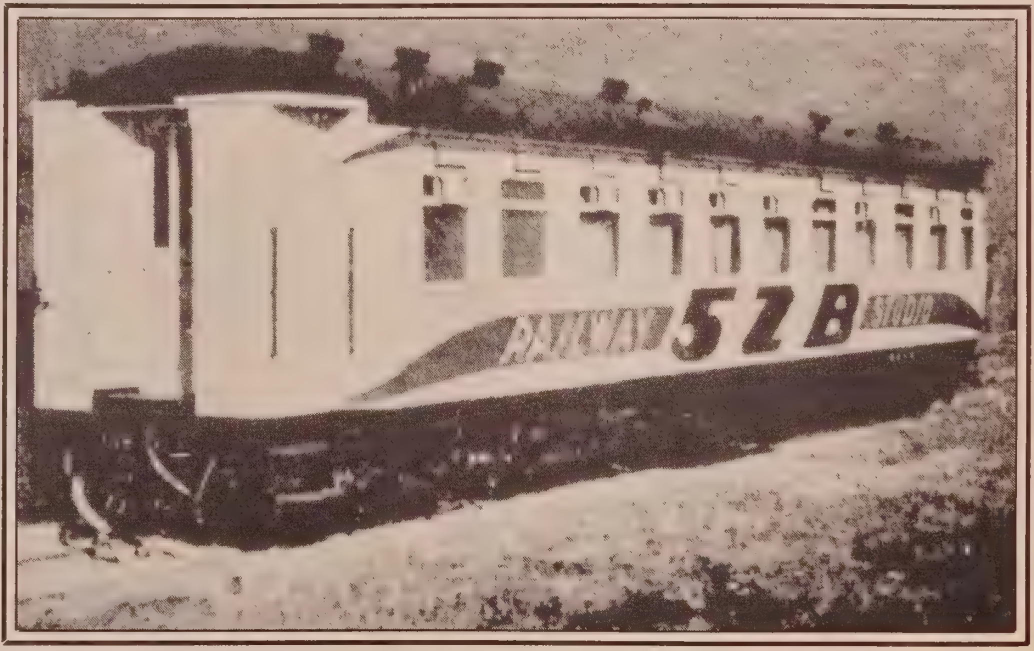
The railroad car in which 3YB was located wasn't self-propelled. It was moved from town to town by hitching it to passing trains. After a year of this vagabond life, either the train, or the idea, had run out of steam. That's when its owners decided to let it remain in Warrnambool, one of the places on its route. There it changed frequency to 1210 kHz and upped its power to 100 watts as it became a resident of the community.

Eventually, they loaded 3YB from the train, and installed it in a more suitable structure. And there it remains to this day, running 2 kW on 882 kHz as operated by Associated Broadcasters Services, Ltd.

This station appears to have been the inspiration for New Zealand's station 5ZB, also located in a railroad car that was toted around for one night stints. The station was placed in service in 1940, with the hope of stirring up interest in radio broadcasting in rural areas lying beyond the normal coverage of New Zealand's nine broadcasters running 1 kW or more.

5ZB also had a rather brief career on the go. By 1942, WWII had caused New Zealanders to focus all of their attention and energies on the war effort. The rolling radio station seemed too frivilous and eccentric an enterprise to continue under wartime conditions, so it was discontinued and the passenger coach in which it was housed was put into regular Aukland rail service (it's still being used).

An operating replica of 5ZB (using the authentic 5ZB transmitter plus other original



In 1940, New Zealand put broadcast station 5ZB on the air. This is the only known photo of 5ZB.

Station KIST, as it looked in the late 1940's.

5ZB equipment) was recently built at a steam railway museum in Timaru, New Zealand.

On The Silver Screen

While broadcasting was cleverly used to hype the 1933 film, *Forty Second Street*, fifteen years later, Tinseltown turned the tables and used a major motion picture to plug a new radio station.

That was in 1948, when MGM released its film, *A Date With Judy*, starring Elizabeth Taylor, Jane Powell, Carmen Miranda, Xavier Cugat and several other stars who were regulars in the colorful and popular MGM musicals of the era. What a lucky break for newly licensed broadcaster KIST (1340 kHz, 250 watts), on De La Guerra Street, in Santa Barbara, CA.

Whether it was due to its appropriate callsign (for a romantic musical film), or simply because the station happened to be convenient to the location shooting area of the film, isn't known. But KIST was in many of the film's scenes, and in brilliant Technicolor.

We have a good view of KIST, looking west on De La Guerra Street. The photo shows the station not long after it went on the air, with a couple of nifty cars parked out front. The single 45-foot lattice type tower is mounted on the roof of the (un-airconditioned) California-style building. There's a handy drinking fountain in front of the building, and over to the left on the ground floor there's the Plaza Cafe and the Popular Army Store. The words "RADIO KIST" are above the top row of windows on the building's facade.

KIST is still in Santa Barbara, and it remains on 1340 kHz, except that now it runs 1 kW (250 watts at night). Happy birthday, KIST!

But Did They Play Rock Music?

Depending upon the part of the world you're from, The Rock is either Gibraltar, or it's Alcatraz. When it comes to wireless of old, Gibraltar is The Rock of primary interest. From the very earliest days of spark communications, the British Admiralty operated stations there in connection with Gibraltar's Large Royal Navy base.

One wireless station, BYW, was located at a spot known as North Front. This is a sandy plain that rises abruptly to become the famous 1400 ft. Rock of Gibraltar. The other station was BYX, located at Windmill Hill. These stations both operated on 500 kHz. A 1920 view we have of early wireless on Gibraltar shows BYW perched on top of the highest point around. A rugged structure at the topmost point of the ridge supports a vertical mast.

GIBRALTAR
Signal Station

Here's British Admiralty wireless station BYW on the Rock of Gibraltar around 1920. It got off to a rocky start.

This station evolved into modern day ute station GYU, which DX'ers regularly report using CW and RTTY on several dozen long and shortwave frequencies in CW and RTTY modes.

Station WJZ as it looked when it first went on the air in 1921.

The JZ Bounce?

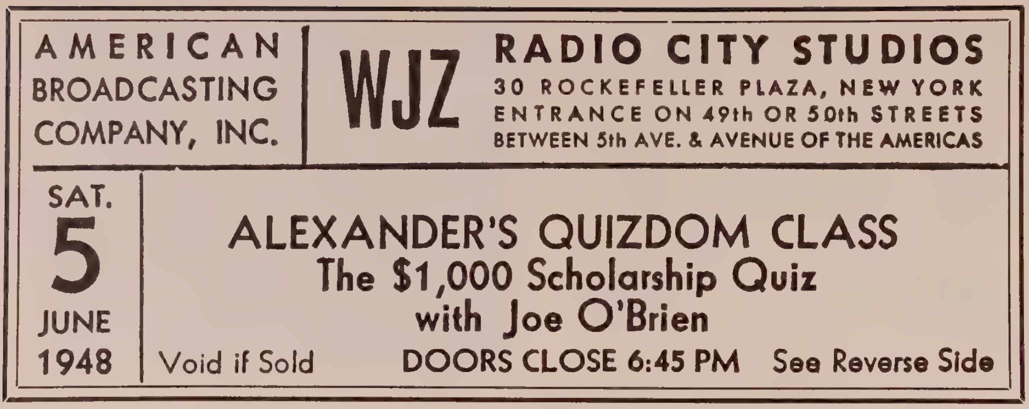
Carol Hinds, of Norwood, MA reports finding an admission ticket to the audience of a 1948 program. The ticket, which Carol found in an old book, is for *Alexander's Quizdom Class*, over New York City station WJZ, of the American Broadcasting Company. She asks if we can fill in information on what became of WJZ, the program, etc. We'll try!

WJZ was one of America's earliest broadcasting stations, licensed on September 30th, 1921 to Westinghouse in Newark, NJ. The station ran 3 kW on 833 kHz, although even before its commercial broadcasting license was issued, it was active under experimental license 2XAI. The JZ in the callsign stood for "Jersey."

Eventually, the station became part of NBC. In New York City, NBC had outlets for its Red and Blue Networks back in the 1930's. The Red Network station was WEAF (660 kHz, 50 kW), while WJZ (770 kHz) ran the Blue Network programming. When all of the Blue Network stations were split from NBC to form into the newly created American Broadcasting Company, WJZ went with them. With ABC becoming a major competing factor in the New York City market, it created an identity crisis for the CBS outlet in New York, which had long used the callsign WABC (880 kHz, 50 kW).

CBS decided to ditch the callsign that caused audiences to think that their flagship station was the ABC outlet. In 1948, CBS changed their WABC callsign to WCBS. After a pause, just long enough to let the callsign cool off, ABC requested the FCC to let them change the WJZ callsign to WABC for their New York City flagship station.

If you think that's confusing, what eventually became of the WJZ callsign is no less strange. ABC wasn't quite ready to toss the



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COMPANY, INC.

WJZ

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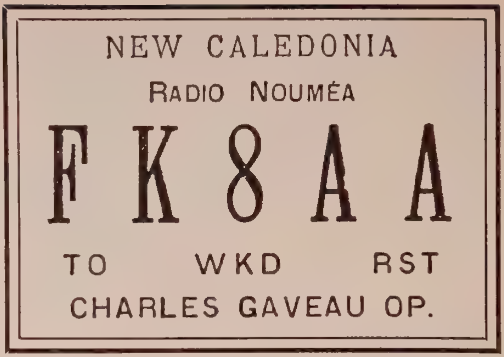
1948

ALEXANDER'S QUIZDOM CLASS
The $1,000 Scholarship Quiz
with Joe O'Brien

Void if Sold DOORS CLOSE 6:45 PM See Reverse Side

Carol Hinds sent us this 1948 ticket to a radio program and asked for additional information.



NEW CALEDONIA
RADIO NOUMÉA
FK8AA
TO WKD RST
CHARLES GAVEAU OP.

If you heard Radio Noumea *in 1939, you were good. If you could convince its laid-back operator to send you a QSL card, you were great.*

historic callsign into oblivion, so it picked up the call (WJZ-TV) for its Channel 13 TV outlet in Baltimore, MD. And that's where it's now located. The New York City outlet (ex-WJZ) continues on as WABC (770 kHz, 50 kW).

As for the program for which the ticket was issued, it was one of several in the 1940's that were blatant ripoffs of the popular juvenile quiz panel show, *The Quiz Kids*. That program went from 1940-1946 on the NBC Blue Network. When ABC was formed from the NBC Blue Network, *The Quiz Kids* didn't become part of the ABC lineup, it remained with NBC, where it continued until 1951. By 1951, the program had become passe and was dropped by NBC, although it ran on CBS for one more year without any national sponsorship.

Alexander's Quizdom Class was a poor-man's off-network version of *The Quiz Kids*, created to fill the void during the height of the *Quiz Kids'* popularity.

The Quiz Kids' format was simple, five extremely brainy moppets with great personalities were on the 6-through-16 year old panel. Some of these youngsters had IQ's of better than 200, and individual panelists specialized in specific subjects like advanced math, botany, history, music, spelling, physics, astronomy, ornithology, geology, etc.

Listeners would send in brainbuster questions to try and stump the young experts. Those who sent in questions the panelists couldn't answer were awarded prizes. The questions and their answers were all verified by a group of university professors. Every parent in North America felt that their own Little Egberts and Baby Rosemaries should be panelists.

Low Power SWBC'er

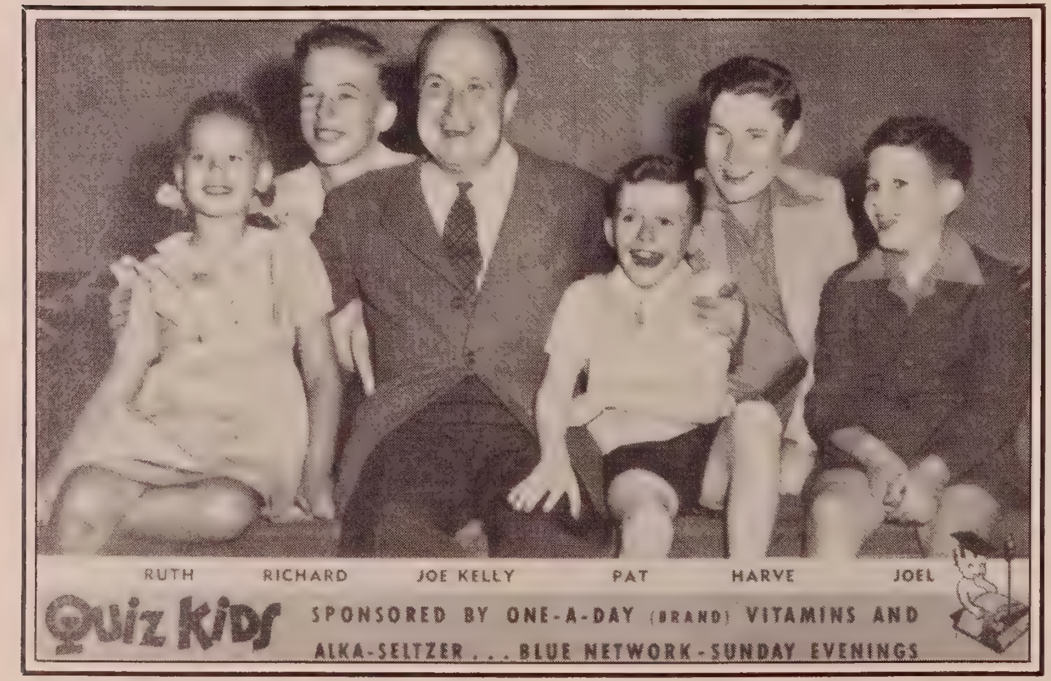
New Caledonia is far from being a commonly reported nation on the shortwave broadcasting bands. Presently there are transmitters operating on 3355 and 7170 kHz, both running 20 kW. In the 1930's, SWL's had to try hard to nail down a QSL from this French territory in the Pacific.

If you wanted to log New Caledonia, you had to search out an elusive station calling itself *Radio Noumea* on 6120 kHz. Let's say that in the late 1930's, it was a *very* rare DX catch. That's because it ran only 20 watts input. Also it operated only from 0730 to 0830 UTC, and on a two-days-per-week sked. *Radio Noumea* was, in fact, primarily a ham station (FK8AA) whose operator, Charles Gaveau, was far more interested in working 14 MHz phone/CW DX than he was in being a broadcaster. Gaveau did the *Radio Noumea* bit only after lots of prodding and pleading from SWL's who were really anxious to QSL New Caledonia. At best, *Radio Noumea* was a half-hearted effort.

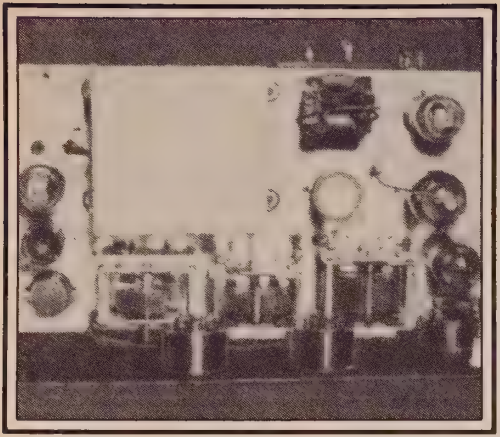
Those few who were sufficiently lucky and talented enough to snag *Radio Noumea* had yet another hurdle to clear before they could rest easy. They had to convince M. Gaveau to send out the QSL card; apparently easier said than done. This required several attempts, and even at that, only a handful of listeners ever saw one of these pasteboards show up in the mail.

In every respect, a QSL from *Radio Noumea* must rank right up there with the toughest shortwave broadcast veris to earn.

Matt Murray, W6OJL, at the controls of WBEM during the filming of Captains Courageous *in 1937.*


RUTH
RICHARD
JOE KELLY
PAT
HARVE
JOEL
Quiz Kids
SPONSORED BY ONE-A-DAY (BRAND) VITAMINS AND
ALKA-SELTZER . . . BLUE NETWORK-SUNDAY EVENINGS

The NBC Quiz Kids inspired several ripoff programs. The Quiz Kids' quizmaster was Joe Kelly. The quizmaster of the WJZ clone had a similar name, Joe O'Brien!



Top of the 10-watt WBEM transmitter showing 42's as oscillator and speech amp, 802 final, 6A6 Class B modulator; built-in genemotor, two crystals. A matching network was also included.

It's therefore a very rare treat to be able to offer *POP'COMM* readers a look at one of these scarce cards. Not that it's a beauty, being plain black and white in its design, and the product of an extremely chintzy printer.

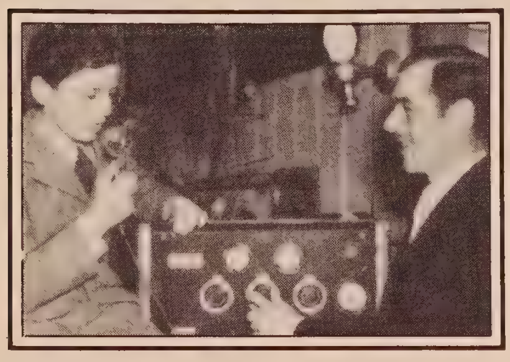
This card was once earned by a recently deceased Texas DX'er. His family, who wishes anonymity, presented *POP'COMM* with all of the QSL cards he had collected during a listening career that spanned many years. We are most appreciative for being given these QSL's.

Lights! Camera! Action!

Since we seemed to bump into several motion pictures during this month's excursion into radio's past, let's take in one more flick with a radio tie-in. That was MGM's 1937 sea epic, *Captains Courageous*, starring Spencer Tracy, Lionel Barrymore, Freddie Bartholomew, and Mickey Rooney.

This classic film required the coordination of an armada of vessels, including the two schooners being filmed as well as photographic, prop, dormitory, supply, and other ships. This armada was coordinated by radio from station WBEM, located aboard the command vessel, the *M/V Invader* under the direction of Radio Chief Matthew Murray, W6OJL. The special communications equipment used was designed and built by L.W. McDowell of Long Beach, CA.

After unsuccessful attempts to run most communications on 60 MHz, it was decided to use yacht communications channels 2174 and 2738 kHz for most activities. These frequencies were also used to communicate with the San Pedro, CA coastal station, KOU which could patch the top people through to the MGM offices by telephone.



That's not Charlie McCarthy on the left, it's little Freddie Bartholomew (looking younger than his 13 summers) "learning mike technique" from Matt Murray. Freddie, one of the stars of Captains Courageous, *and Matt are dressing for dinner aboard the* M/V Invader *in this posed publicity still. According to MGM's publicity department, Freddie asked W6OJL to help him study for a ham ticket. You believe any of this?*

The transmitter aboard the *Invader* ran only 10 watts and, surprisingly, was able to reach KOU from 1,300 miles away. The rig used a type 42 oscillator and an 802 final with 42 speech and 6A6 Class B modulator using a push-to-talk mike. Only thirty major parts were used and the transmitter weighed thirty pounds. Plate power was supplied by a genemotor, with a storage "A" battery for other required power.

This was the first time that a major motion picture company used radio communications to such a large extent. The skippers of the two schooners were told how to maneuver their vessels during the filming, and the system was also used to play some of the dialogue spoken by the actors for studio executives. Victor Fleming, the Director of *Captains Courageous* never left Los Angeles, being able to do his job for the location scenes using shortwave radio. From that time on, radio communications became virtually mandatory for filming sea sequences.

That will make it a 30 for October. Your photos, news clippings, QSL's, reference books, questions and comments about old time wireless and radio broadcasting and communications are welcome and sincerely appreciated.

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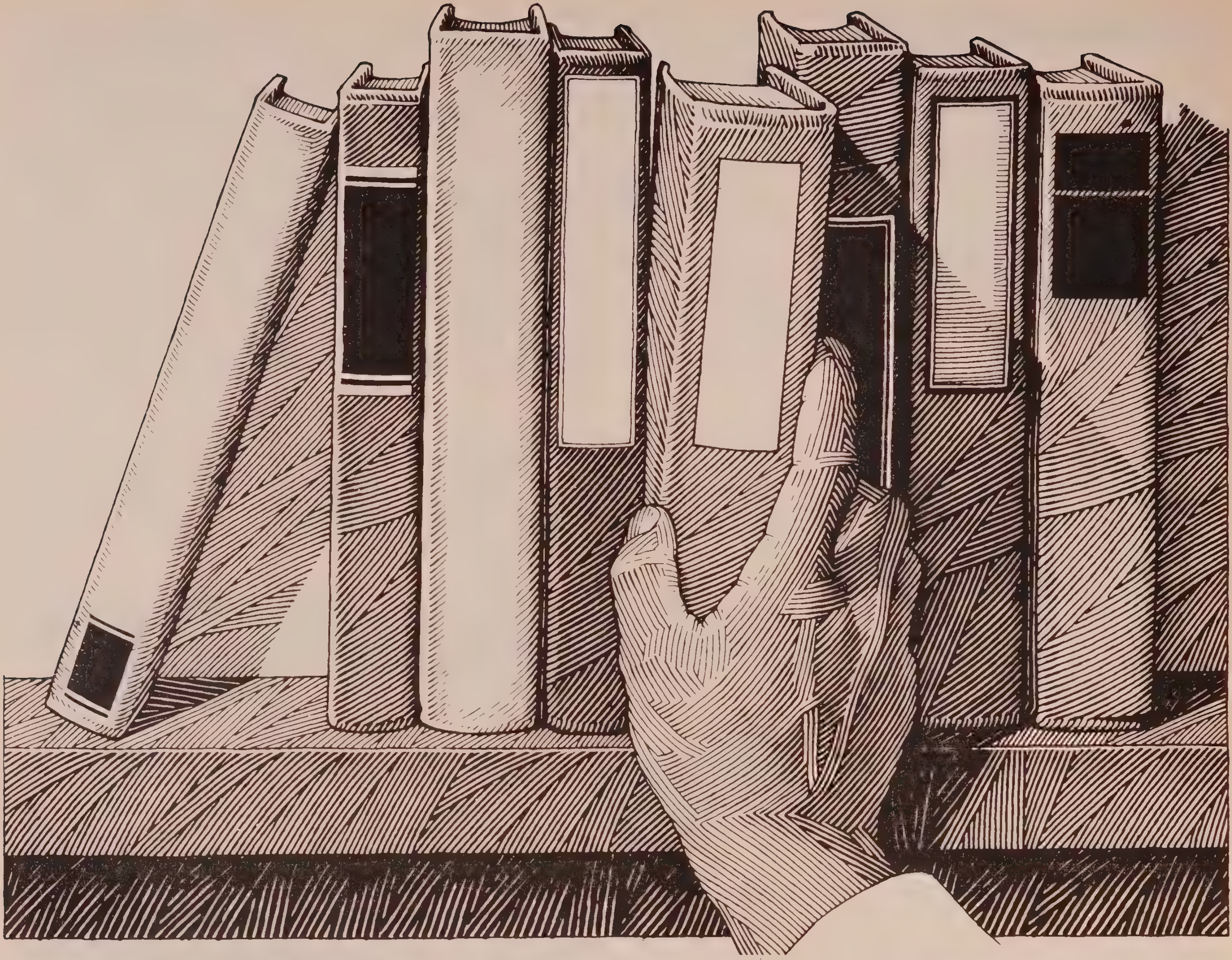


BOOKS YOU'LL LIKE!

BY R. L. SLATTERY

Your Own LPFM Station

". . . one sweet day you have found the secret to getting your chance to play your fingers the timbrels of the aether, to make some dramatic, unearthly music; to create a new community of feeling, thinking individuals, and to create words and ideas and musics which have never been made available to that community before: all those feelings of love and bitterness and rage and beauty. You, with this giant palette called a frequency. And it's just waiting there until you and your friends come along with songs and poems and statements and moans and howls and words and feelings to transmit to all the hungry ears, all around you. They, and you, could ask no less."

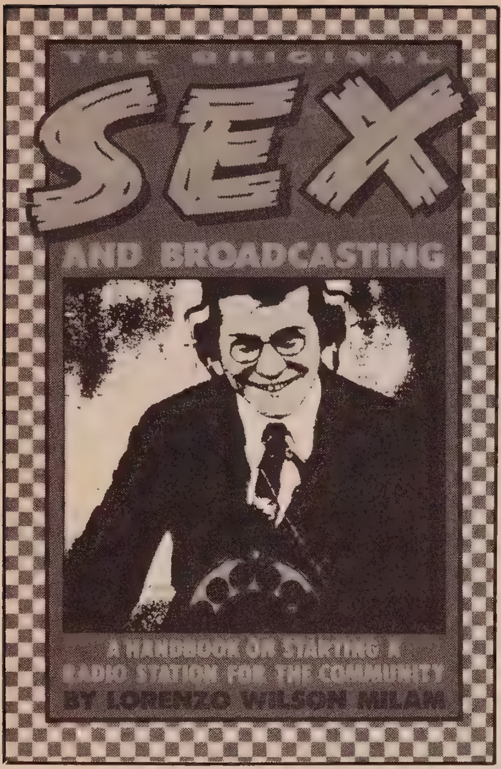
Those are the words of Lorenzo W. Milam from his book *Sex and Broadcasting, A Handbook on Starting a Radio Station for the Community*.

The book, of course, doesn't have anything to do with sex. It's just that the author's Great Aunt Beulah convinced him that the word sex in the title would double sales and quadruple readership. Auntie must have been right, for this classic book (which originally came out in 1975) is now out in its third (revised) printing, and the latest (1988) edition has grown to 352-pages. It's as highly regarded as a valuable and informative source of information on licensing and operating a small broadcasting station as it is an offbeat, riotously funny (often hilarious), and completely irreverent unique personal commentary on radio as seen from the interiors of a number of several community broadcast stations. Milam, it should be noted, is the founder of many low powered (and low bank account) community FM stations, including KRAB, KBOO, KPOO, KTAO, and co-founder of KDNA and KFAT.

Community radio stations are FCC-licensed 10-watt non-commercial (class D) FM broadcasters that practically anybody (including your or I) can put on the air if you can line up an available frequency, have only $1,500 to $10,000 in assets, can successfully fill out and file an FCC Form 340, and can convince seven to nine friends to sit on the board of directors of the non-profit corporation you'll need to own the station. On its primary level, it is a detailed how-to-do-it book on filing the FCC paperwork, getting a construction permit, licensing, putting-on-the-air, and operating such a station. From a visual viewpoint, it's a phantasmagoria of strange photos, old woodcuts, bizarre rubber stamp imprints, and other eye-catching graphics.

Nevertheless, the most outstanding thing about *Sex and Broadcasting* is the wisdom, wit, and passionate love of radio with which Milam presents his thoughts. The guy has unique insights and opinions on just about everything in sight. By the time he's through, many sacred cows are seen running for their lives from Milam the Merciless, large harpoons jutting from their respective rumps.

He fears nothing, taking on everybody and everything he can line up in the crosshairs. That includes the FCC, specific radio and TV stations that annoy him, education-



al broadcasters, shortwave, magazines, networks, radio preachers, listeners, pirate stations, on-the-air obscenity, record companies, music, programming, engineers, lawyers, accountants, equipment he hates, and many other things. Few things connected in any way with the art and science of radio escape completely unscathed.

The FCC gets much special attention. In dealings with the FCC, Milam provides six handy thoughts: 1. They don't care about you; 2. They have heard your story before; 3. They don't care about you; 4. Influence means little to them; 5. You mean more work for them; and 6. They don't care about you, *at all.*

Through it all, you'll get plenty of useful names of addresses for where to buy cheap equipment, LP records for only $1, for raising money, getting people to provide time and talent on a volunteer basis, etc. He even offers special "prayers" he's composed to keep the equipment operating properly!

This is a rare treat; a wild freeform mix of valuable insider information on LPFM, plus advice on how to broadcast for the sheer love of radio itself. It's also one of the cleverest and genuinely funny books I've read in a very long time. Whether or not you have any interest in actually licensing and operating your own personal LPFM station, if you love radio you'll be knocked out by Milam's brilliant and devastating commentary on *all* aspects of broadcasting.

Sex and Broadcasting is available at $12.95, plus $2 shipping (to addresses in USA/Canada/APO/FPO) from CRB Research Books, Inc., P.O. Box 56, Commack, NY 11725. (NY residents add sales tax.)

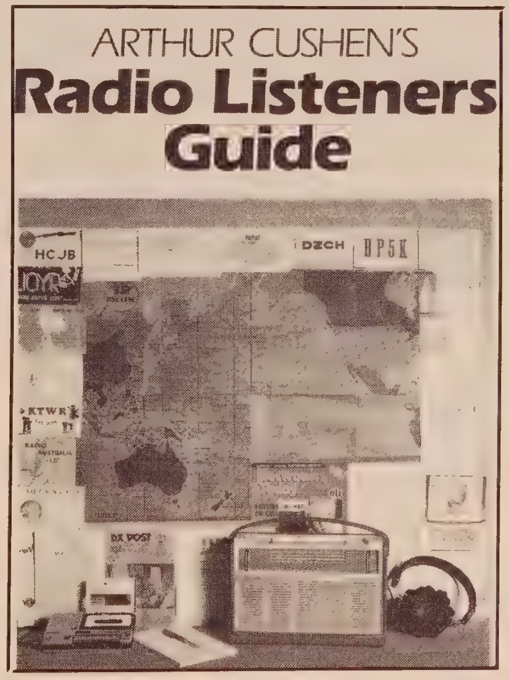
Radio Listeners Guide

Over the decades there have been a handful of authors whose names have become synonymous with the world of monitoring. New Zealand's Art Cushen must certainly be listed near the very top of that august list, for he has been on the SWL'ing scene for more than fifty years. His many writings and broadcasting activities have gone full speed ahead despite his being visually handicapped.

Ten years ago, Cushen's book *(The World In My Ears* an autobiography) became very popular and was sold in seventy nations. Now Cushen has a new book out, *Arthur Cushen's Radio Listeners Guide.* This is a large-format 108-page illustrated book that is presented in a magazine-type format. That's because it is a collection of Cushen's best articles that have appeared in recent issues of *Electronics Today* (a magazine in New Zealand).

Art covers many topics in this volume, all intended to make shortwave listening simpler, and with maximum excitement. He discusses getting started, sending reception reports, stations addresses, mediumwave listening, time conversion, propagation, equipment, antennas, and a whole raft of other related topics. Cushen knows his topic well, and relates it in a non-technical style that's easy to understand, pleasant to read. The many profiles of international shortwave broadcast stations are particularly well done.

In all, quite an excellent book to have around the DX shack for reference and general reading. You'll enjoy Art's bright, upbeat, and very positive approach to DX listening. Maintaining enthusiasm for a hobby after fifty years says as much about the quality of the hobby as it does about its devotees. We're glad that Art Cushen is one of those devotees.



You can obtain a copy of *Art Cushen's Radio Listeners Guide* from Gilfer Shortwave, P.O. Box 239, Park Ridge, NJ 07656. The price is $17.95, plus $2 postage/handling. Worth having.

Enhance Your Telephone — Save Money — Have Fun!

Howard W. Sams & Co. has recently published the second edition of *Electronic Telephone Projects*, a 272 page book with 22 build-it-yourself projects.

The book provides an introduction to the operations, rules, and regulations which govern consumer-owned equipment connected to the telephone network, and how this equipment may be connected. General information on the construction of electronic circuits and methods of constructing printed circuits is included.

Each operation is clearly detailed with step-by-step construction details and procedures. Included for each project is a photo of the unit, schematic, printed-circuit board pattern, parts layout, and a list of all required parts.

SAMS
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Second Edition
Anthony J. Caristi
1 2 3
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Projects you can create include:

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Sams is a publisher with more than 400 technical books covering electronics, computers, engineering, and communications available through bookstores and electronic distributors.

Off-Duty Policeman Rescues Man From Fire

In Rockwood, Tennessee, an off-duty policeman helped save a life for the second time when he pulled a man from a burning building. Two-and-a-half years earlier, Patrolman Rodney Redmon rescued a little boy who had fallen into a storm sewer.

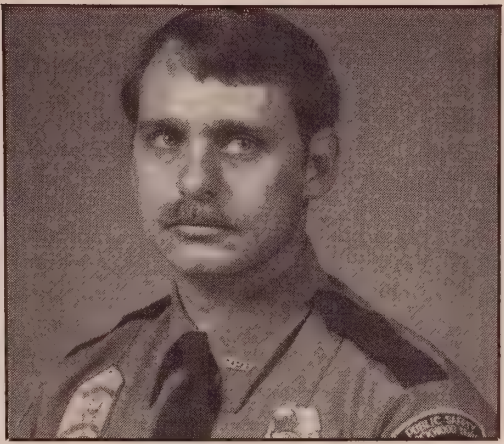
In his most recent rescue, Redmon rescued Fred (Junior) Pass Jr. from a burning building near a house in Rockwood.

SCAN PUBLIC SERVICE AWARD

"I was going home from Sunrise Market and saw smoke coming from the building," Redmon told the *Roane County News.* "I pulled up to the house and knocked on the door and Paul Ed [Pass] told me his brother was still in the building."

Junior Pass was sleeping in an old playhouse, formerly used by his niece, at the home of his brother, Paul Ed.

"I went in and grabbed him by the shoulders and pulled him out," Redmon told the *News.* "I don't know if I kicked in the door or opened it."



Redmon said Pass was lying on the floor when he found him, with smoke only a few inches above his body.

"If he would have been in the bed or raised up at all, he would have been overcome by smoke and would probably be dead," Redmon said.

Junior Pass received first degree burns to his head and suffered from smoke inhalation.

According to Paul Ed Pass, his brother would not be alive if Redmon had not stopped at the house.

The playhouse, built for Martha Tucker, Junior's niece, was being used as a storehouse for family belongings and sleeping quarters for Junior. "I'm glad he got out alive," Tucker said. "We lost a lot of memories, but at least he got out alive. That building was built for me as a playhouse.

"I thank God for sending Rocky by. If he hadn't been here, he'd be dead. It was very courageous for him to do it."

Redmon didn't believe he did anything unusual. "I don't feel it was heroic," he said. "I don't feel I did anything special."

Two-and-a-half years earlier, Redmon rescued a two-year-old from a 33-foot storm sewer. The boy was being held on his father's shoulders when his father stepped into a hole. Redmon, who was then a deputy with the Roane County Sheriff's Department, climbed down a nearby drain hole and crawled some 120 feet to rescue the two-year-old. Redmon later received Gov. Lamar Alexander's Outstanding Tennessean Award for that rescue.

For his rescue of Junior Pass from the burning building, Rodney Redmon will receive the SCAN Public Service Award, which consists of a special award plaque and a cash prize. For making the nomination, Dale H. Sampsel of Oliver Springs, Tennessee, will also receive a plaque. Congratulations to both of you.

SCAN PHOTO CONTEST WINNERS

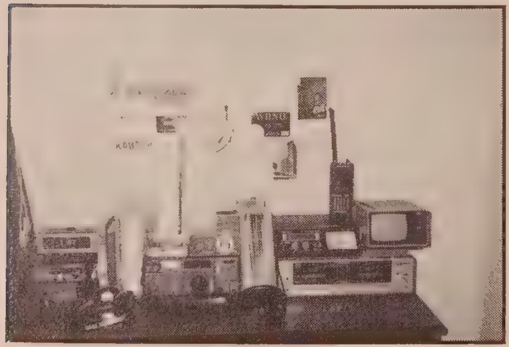
Best Equipped

Michael J. Donahue of Savage, Maryland, sends along this photo of his wide array of equipment. He uses a Realistic PRO-2004 scanner, Realistic PRO-30 portable scanner, Realistic TRC-453 AM/SSB CB transceiver and an ICOM R71A communications receiver.

Other items include a Mizuho SX-59 preselector used with the longwire antenna on the R71A, Dovico VT-5501 portable television, Realistic CTR-75 voice-actuated cassette recorder used with the PRO-2004, Sears LXI series dual cassette recorder used for permanent recording, and a Micronta 12Vdc power supply to power the CB unit.

Michael recently moved his antennas from his balcony to the attic above his apartment for improved reception. He has three scanner antennas: a ground plane Larsen for air and VHF reception, one ground plane Larsen for UHF reception, and a UHF loop antenna for 800 MHz reception. A 50-foot longwire is used with the R71A. An Atari 520ST computer System with printer is also used to maintain a station database.

Michael is a technician who repairs military VHF and UHF radio systems. His interest in radio goes back a long way, and his current favorite activities are listening to local police and fire departments on his scanners and monitoring 40 and 80 meter amateur transmissions.



Best Appearing

Michael Harbour's listening post uses an appropriate fixture for a communications hobby, an old telephone operator's desk.

The Meridian, Mississippi, listener uses a Bearcat 100 handheld scanner, Realistic PRO-2003 scanner, Regency K100, Monitoradio and RPH-410 VHF high band scanning walkie-talkie. Michael also uses a Uniden 40-channel SSB citizens band radio with an Astatic D-104 microphone, Worldstar MG-6100 multiband shortwave receiver and Cobra cordless telephone. He also has a 50-foot outside tower and four external speakers.

Michael writes that his station isn't the "biggest or the best," but he probably doesn't get too many wrong numbers.

Winners in this month's photo contest receive the SCAN station wall clock. An attractive, easy-to-read clock in the official 24-hour time format used universally in radio communications. It features a glass crystal face for clear reading and is totally independent of power lines. Accurate to within 10-seconds per month, it is powered for a year or more on a single "AA" battery cell.

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RTTY

BY ROBERT MARGOLIS

THE EXCITING WORLD OF RADIOTELETYPE MONITORING

Seeking a challenge to your RTTY monitoring? How about seeking stations that produce clear copy in the radio spectrum between 14kHz and 190 kHz? Some stations operate openly there, and are well worth the hunt.

For several weeks recently, I spent some time investigating that spectrum, and received copy in the clear both late at night, and during the afternoon. The stations were around 48 kHz, which is part of the low-frequency band. LF radio is the portion of the spectrum between 30 kHz and 300 kHz.

The first station found was operating on 47.4 kHz and was sending continuous RY's without an ID at 0426 UTC, and from 1449 to 1500 UTC. The RTTY setting was on 85/50N.

Another station was found operating on 48.4 kHz at 1556 UTC. It was also sending RY's with no ID at 85/50R. A short time later, there was a series of tactical calls, followed by 100-baud encryption at 1629. I decided to monitor this frequency for the next several hours.

At 1933 and 2250 UTC came an ID tape (see Fig. 1) indicating that the transmission was from Whiteman Air Force Base in Missouri. A different set of tactical calls from those at 1556 UTC was sent along with RY's at 1946. A portion of that long series of calls is shown here (see Fig. 2). Whiteman returned to the encrypted mode at 200 UTC.

Nearly a month later, I was monitoring the spectrum at 1248 UTC and found RY's on 48.5 kHz, just 100 Hz higher than where Whiteman was logged. It turned out that the transmission was from the Strategic Air Command, Silver Creek, NE (see Fig. 3).

This LF radio RTTY hunt was not as easy as you might think. At least a couple of dozen stations were found operating in the encryption mode. It took intense monitoring to come up with the good stuff.

If you have never monitored LF radio before for RTTY output, and would like to try your hand at it, a somewhat easy station to tune in is CFH, the Canadian Forces Meteor Center at Halifax, NS. It is found on 122.5 kHz, with weather at 75 bauds. It operates 24 hours daily, except for the second Thursday of each month, when its transmitter is down for maintenance from 1200 to 1600 UTC. It not only operates RTTY on this frequency, but sends FAX weather maps as well. I copied a FAX transmission at 0500 UTC, with my FAX decoder set to 120 LPM/576 IOC.

Dr. Gary Zaid of Wisconsin, proud owner of an Info-Tech M-6000 RTTY decoder, writes, "I have noted signals being transmitted at 850/48 that seem to be slow idling TDM, but are not copyable on any of the TDM or Baudot modes. What are these signals?

You were receiving 48-baud TDM, Doc, but the M-6000 is not programmed to receive that rate, nor is it able to receive 64- or 72-baud TDM. Europeans have equipment that can decode these rates, but their decoders are unable, at present, to operate without modification here in the U.S.

Dr. Zaid also asks about uncopyable 850 Hz shift signals he receives that appear to be using non-standard modes of transmission. There are many irregular RTTY modes used for encryption purposes by the military and government agencies worldwide, and are found to be in abundance over HF radio. Also in use are ARQ and FEC RTTY that run at speeds other than 100 baud, and a regular RTTY signal that runs at 40.5 bauds.

Just the other day, I logged an unidentified station on 12192 sending continuous RY's from 2312 to 2352. The RTTY setting 425/43R; not 45 bauds as one might expect, but 43. I checked the test tape at slightly faster and slower speeds and got only gibberish.

Dr. Zaid also asks, "What is RFLI and why does it utilize so many TDM stations for so little traffic?" RFLI is the French naval facility at Fort de France, Martinique. The French military posts throughout the world are the single biggest users of TDM RTTY at present. TDM RTTY allows them to transmit error-free printouts and to use a single radio channel to carry two , or four channels of data.

Many computer-owning readers continue to send us mail asking how to use their equipment to successfully receive RTTY. There are many brands of computers and computer-operating systems on the market. For me to answer your questions with authoritative knowledge, would involve my having to learn each type of system, which is

Figure 1

```
ZCZC XMMXMMXMM
RR
BT
THIS IS A TEST
FOR WHITEMAN AFB ONLY
THIS IS A TEST TO CHECK
EACH OF THE TWENTY-FIVE
DOTS OF EACH COLUMN
MATRIX AND TO VERIFY
THAT EACH COLUMN GROUNDER
IS FUNCTIONING PROPERLY
NT#NT#NT#NT#NT#NT#NT#NT#NT
#NT#NT#NT#NT#NT#NT#NT#NT#
END OF TEST
BT
NNN
NNN
NNNNRYRYRYRYRYRYRYRYRYRYRYRYRYRYRY
```

Figure 2

```
RYRYRYRYRYRYRYRYRY
ZCZC XLLXLLXLL
ZZ
BT
DELTA KILO CHARLIE
SIX FOXTROT FOXTROT
QUEBEC OSCAR ZULU
JULIETT FOXTROT MIKE
THREE ECHO TWO
TANGO FOUR WHISKEY
BRAVO UNIFORM OSCAR
SIERRA FOXTROT XRAY
THREE SEVEN UNIFORM
XRAY YANKEE ROME
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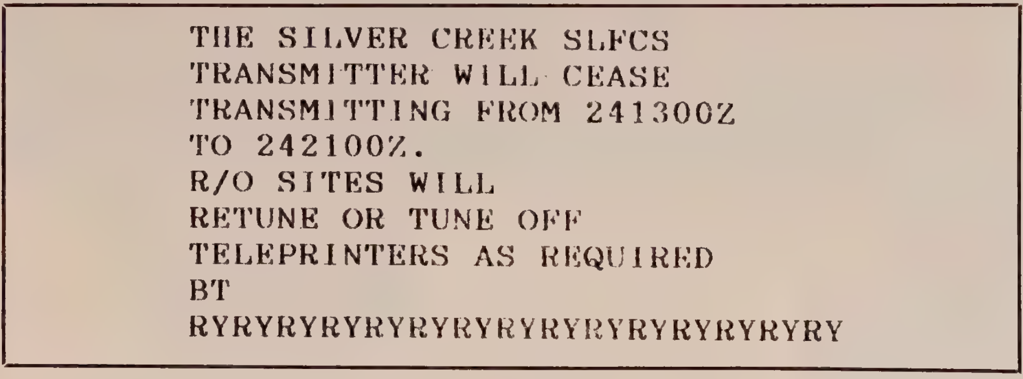


```
THE SILVER CREEK SLFCS
TRANSMITTER WILL CEASE
TRANSMITTING FROM 241300Z
TO 242100Z.
R/O SITES WILL
RETUNE OR TUNE OFF
TELEPRINTERS AS REQUIRED
BT
RYRYRYRYRYRYRYRYRYRYRYRYRYRY
```

Figure 3

Abbreviations Used In The RTTY Column

AA	Arabic
ARQ	SITOR mode
BC	Broadcast
EE	English
FEC	Forward Error Connection mode
FF	French
foxes	"Quick brown fox . . ." test tape
GG	German
ID	Identification/ied
MFA	Ministry of Foreign Affairs
nx	news
PP	Portuguese
RYRY	"RYRY . . ." test tape
SS	Spanish
tfc	traffic
w/	with
wx	weather

not realistic, and would defeat the whole purpose of this column.

If I receive any information about RTTY-oriented software from manufacturers of the product, I will gladly tell you about it. Meanwhile, I believe it would be best for those of you needing such information to join a users group for your particular computer brand. Group members would be much more helpful in this area than I ever could hope to be.

Users of Heath/Zenith computers running MS-DOS version 2.0 or later can use RTTY-demodulating software called "ULTRA-RTTY," which is capable of transmitting and receiving standard Baudot and ASCII codes. It requires an RTTY terminal interface such as the Heath HD-3030.

For details about software, write to the group at P.O. Box 217, Benton Harbor, MI 49022-0217.

A reminder that the annual war games between the "White Pact" and "Green Pact" nations take place this month. It is an adventure many RTTY buffs look forward to monitoring each year.

It is called the Inter-American War Games and involves NBA, the U.S. Navy at Balboa, Panama, acting as a communications center, while the South American navies from Argentina, Brazil, Columbia, Ecuador, Paraguay, Peru, Uruguay and Venezuela "battle it out" both in the water and grid-lined paper.

Some frequencies worth watching for IAWG-88 are 11570, 16194, 16265, 18550, 19616 and 20350. These are the major channels, smaller activity will pop up on other prearranged frequencies.

The RTTY channels confirm the usefulness of *POP'COMM*. While tuning the FCC monitoring station network (10902 kHz, 425/45N) running bit inverted traffic one night at 0235 UTC, listener R.G. Lewis of San Francisco noticed our magazines name. FCC HQ's in Washington was sending frequencies to be checked, specifying *Popular Communications* as the source of information!

RTTY Intercepts
(Settings= Shift/Baud/Polarity)
All Times Are UTC

2127.3: UPI nx in EE at 0117, FDM 85/50R (Tom Kneitel, NY).

2419: Telex from a Calif. firm to CINCLANT-FLEET re access to "launcher area." Was 100N at 2419 (Peter Thompson, UK). Freq used by USN. The Tlx was addressed to Commander-in-Chief, Atlantic Fleet-- Ed.

2517: AP/UPI nx/sports in EE at 0129, FDM 85/75N (Kneitel, NY).

2840.7: AP/UPI nx at 0242, FDM 85/50R (Kneitel, NY).

3237.8: AP/UPI nx/sports/wx at 0141, FDM 85/75N (Kneitel, NY).

3238.5: "Daisy Chain" w/RYRY & foxes at 0420, 850/50N (Joe Palkovic, FL, via Fred Hetherington, FL). See our 9/88 column for our comments -- Ed.

3608: GHD2, Gallan Head R., UK w/list of svcs available, ARQ at 1009 (Thompson, UK).

4029.6: 78IJU, a Spanish Navrad unit at 0403 clg 75RQA w/RYRY & SGSG, 850/100R (Kneitel, NY).

4044.4: Very Quick Brown Foxes, no ID's, at 0007, 850/75R (Kneitel, NY).

4044.8: AP/UPI nx in EE at 0400, FDM 85/75R (Kneitel, NY).

4172: WE3806, Great Lakes freighter **John G. Munson** w/ARQ tfc at 1317 (Ed.).

4196.4: 75ORC, a Spanish Navrad w/RYRY at 0416, 850/75R (Dr. Gary Zaid, WI).

4215: Un-ID w/RYRY at 0512, 425/50N (Ed.).

4234.4: 71HGE, a Spanish Navrad w/wx in EE re condx in Spanish Sahara, 850/75R at 0236 (Zaid, WI).

4489: GFL26, Bracknell Meteo, England w/CQ & RYRY + coded wx at 0055 (Zaid, WI). Setting?-- Ed.

4605: OST, Oostende R., Belgium w/ARQ phasing sig & CW ID at 0149 (Ed.).

4625: AP/UPI nx/sports in EE at 0253, FDM 85/75N (Kneitel, NY).

4873.5: AIR, HQ USAF, Washington, DC w/RYRY at 0201, 850/50R (Richard Gleitz, PA).

4900: RUU78, Leningrad Meteo, USSR w/coded wx at 0741, 1000/50R (Gleitz, PA).

5140: RWW73, Moscow Meteo w/coded wx at 0038, 1000/50R (Kneitel, NY).

5180: OMV39, Prague, Czechoslovakia w/RYRY, 50R (Thompson, UK).

5474.5: HGX21, MFA Budapest, Hungary w/RYRY & CQ at 1825, 50R (Thompson, UK).

5470: HZN, Jeddah Meteo, Saudi Arabia w/coded wx at 1626, 50N (Thompson, UK).

6260.5: C6CJ, **M/V American Reefer** w/Telex to Israel via OXZ, ARQ at 1837 (Thompson, UK).

6418.5: Un-ID w/nx in GG, FEC at 2011 (Thompson, UK).

6458.6: AFRTS listing its sked menu of forthcoming programs at 2145, FDM 85/75R (Kneitel, NY).

6496: WLC, Rogers City, MI w/Great Lakes wx at 1503-1513, FEC (J.M., KY).

6791: FSB, Interpol HQ, Paris (St. Cloud), France w/ARQ phasing sig & CW ID at 1027 (Thompson).

6805: SOG280, PAP Warsaw, Poland w/nx in EE at 0044, 425/50R (J.M., KY).

6861: EBA, Madrid Navrad, Spain w/JE SUIS QRU to FUG at 1327, 75R (Thompson, UK). EBA should take French 101 for the correct verb form, which is J'AI QRU-- Ed.

6920.5: RAT25, Moscow Meteo, USSR w/coded wx at 0015, 1000/50R (Kneitel, NY).

7342: 5NK, Kano Aero, Nigeria w/RYRY at 2325, 600/50N (Hetherington, FL).

7402.5: JMG3, Tokyo Meteo, Japan w/coded wx at 0930, 850/50R (Hetherington, FL).

7407: CML5, PTT Havana, Cuba at 2228 w/telegrams in SS to the USA, 425/50R (Kneitel).

7426: 5NL, Lagos Nigeria w/RYRY at 2350, 425/50R (Hetherington, FL).

7537: NLVQ, **USS South Carolina** w/foxes to Norfolk ICSB, VA at 1256, 425/75R (J.M., KY). ICSB stands for Interim Command Switchboard. This ship (CGN-37) is a nuclear propelled guided missile cruiser operational since Jan/75-- Ed.

7576: Un-ID w/RYRY at 1731, 75 baud (Thompson, UK).

7610: SUA231, MENA Cairo, Egypt w/nx in FF at 1817, 50R (Thompson, UK).

7630: TTL, ASECNA N'djamena, Chad w/RYRY at 0455, 170/50N (J.M., KY).

7662: HBD20, MFA Berne, Switzerland at s/off in ARQ at 0953 (Thompson, UK).

7680//7680.3//7680.7: GXQ, British Army, London, England w/foxes, count & RYI at 0136, FDM 170/50R & N (Kneitel, NY).

7895: OLX2, PTT Prague, Czechoslovakia w/tfc at 2335, 425/50R (J.M., KY).

7920: NJM, Macquarie Island, Australia w/coded wx at 1112, TDM 350/96B (Ed.).

7922.1: AP/UPI nx in EE at 2320, FDM 85/75R; this was //7923.3 (FDM 85/75R) which was part of same xmsn. On that freq they were running an hourly update of NOTAMS for all areas of the world (Kneitel, NY).

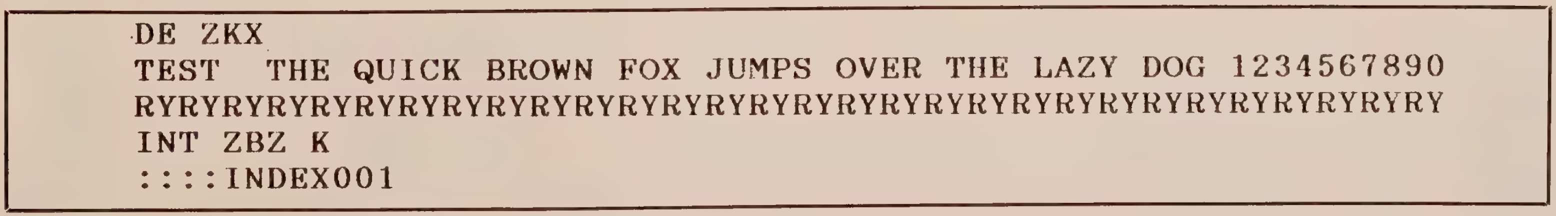
7980: Y3I, Potsdam Meteo, GDR w/coded wx at 1325, 100R (Thompson, UK); ID'ing as Y3K7 & calling CQ w/RYRY foll by coded wx at 0011, 800/100R (Kneitel, NY).

8014.4-8016.4: RYRY + foxes + TEST DE RCCACP, 170/75N on 7 chans at 1238. Sent by VER, Canadian Forces at Ottawa on circuits to Debert, NS & Shilo MB (Ed.).

8055: LZA2, PTT Sofia, Bulgaria w/RYRY & testing for Beijing. Was 50N at 2056 (Thompson)

8101.2: Un-ID w/wx & NOTAMS at 0101,

Figure 4



```
DE ZKX
TEST  THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG 1234567890
RYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRY
INT ZBZ K
::::INDEX001
```

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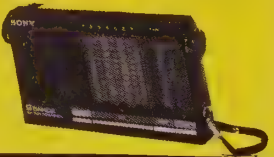

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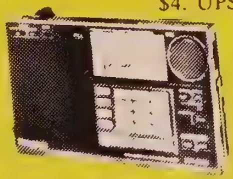

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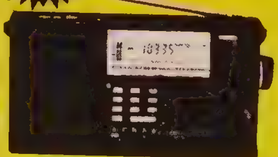

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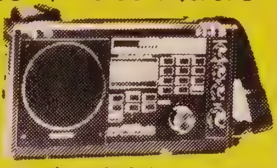

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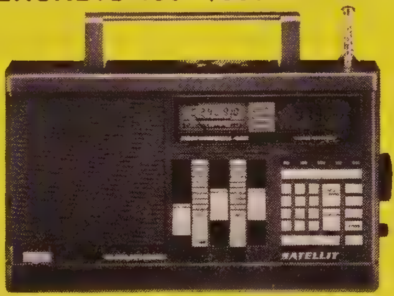

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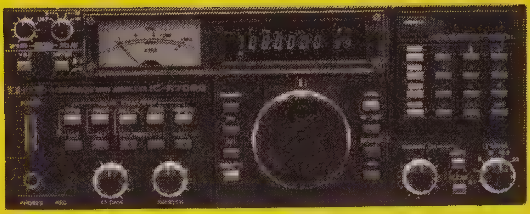

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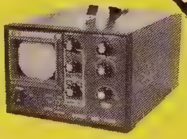

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425/50R (Zaid, WI). It's STK, Khartoum Aero, Sudan. This is confirmed by the "SEB" sent after the ZCZC start sig-- Ed.

8118.2: 9JZ6, Lusaka Aero, Zambia w/RYRY DE FLLS (meteo location code for Lusaka) at 0445, 630/50R (Palkovic, FL).

8120: TNL96, Brazzaville Aero, Congo w/RYRY & CQ at 2130 & 0140, 425/50R (Hetherington, FL). Altho Brazzaville usually ID's w/blanket callsigns TNL96/TNL97, the call actually assigned to this freq is TNL48-- Ed.

8136: XVM2, VNA Hanoi, Vietnam w/nx in Vietnamese at 1000; in FF at 1120, 500/50R (Hetherington, FL).

8297.6: URB2, Klaipeda, USSR w/RYRY foll by 5F tfc at 0147, 170/50N (Kneitel, NY).

8346.1: Un-ID w/several Telexes, ARQ at 1424 (Zaid, WI). The printout you submitted, Doc, indicated that this was from a Pemex tanker, possibly **Tolteca**-- Ed.

8492: NMF, USCG Boston, MA w/wx in FEC at 0201 (J.M., KY).

8604: UJY, Kaliningrad R., USSR w/RYRY at 0038, 170/50N (Kneitel, NY).

8711: KPH, San Francisco R., w/wx in FEC at 0513 (J.M., KY).

9070: 6VU, Dakar Meteo, Senegal w/RYRY at 0314, 425/50N (Zaid, WI). While they use the generic call 6VU, the assigned callsign here 6VA29-- Ed.

9224: RPFRW w/coded tfc & some PP words, ARQ at 1919 (Thompson, UK). It's Lisbon Navrad, Portugal-- Ed.

9231: 9KT27, KUNA Safat, Kuwait w/nx in AA at 1957, 425/50N (J.M.).

9274.3-9276.4: VDD, Canadian Forces, Halifax, NS w/foxes w/o ID on 10 channels at 1426, 170/75N (Ed.).

10213: CNM29, MAP Rabat, Morocco w/nx in EE at 1830, 425/50R (J.M., KY).

10248.7: CLP1, MFA Havana, Cuba w/cables & crypto to embacubas in Africa & Central America at 0434, 425/75N (Zaid, WI). Anybody know the location of CLP52 which was the recipient of CLP1's s/off?-- Ed.

10479.5: BCX22, PTT Shanghai, PRC w/RYRY at 1156, 425/50R (Dallas Williams, CO).

10574.2: Un-ID w/sports nx in FF at 0314, 425/50N (Zaid, WI). Your printout indicates this was RFFIC, French Navrad, Paris. Wasn't this TDM 425/96 mode?-- Ed.

10599: XVN, VNA Hanoi, Vietnam w/nx in EE at 1527, 50N (Thompson, UK).

11054: 5KM, Bogota Navrad, Colombia w/RYRY & SGSG at 1826, 425/75R (J.M., KY).

11069.2: LOR, Puerto Belgrano Navrad, Argentina w/wx in SS at 0429, 250/75R (David Agnew, DE).

11420: VNA86, VNA Hanoi, Vietnam w/nx in FF at 1211, 500/50R (Williams, CO).

11440: EIP, Shannon Aero, Ireland w/TAF wx at 0354, 850/50N (Williams, CO).

11978.6: Un-ID w/foxes & RYRY at 1226, 425/50R (Kneitel, NY).

12205: RCF, probable USSR sta, w/RYRY & CQ at 1442, 75N (Thompson, UK). RCF is MFA, Kupavna, USSR-- Ed.

12212.5: YZO7, TANJUG Belgrade, Yugoslavia w/nx in EE, 0000-0400, 425/50R. Was //5240-//7658//13440 kHz (Ed).

12223.7: VOA Tangier, Morocco w/nx in AA at 0008, 425/75N (Ed.).

12241.7: RYRY + ETA MLR QRA BMK (X3) DE CNZY (X3) ZHC (X3) at 2131, 425/50N. Then sent SINPO data before leaving air at 2205. Any thoughts on who/what?-- Ed.

12468: "WNY" w/RYRY + 5F grps at 1659, 425/75N. Same on 16448 at 1929, 425/75R (J.M., KY). My logs show coded tfc in the past on 16448 from an un-ID source in Havana-- Ed.

12478: 72GCB, a Spanish Navrad w/RYRY, SGSG & foxes at 0609, 850/75R (J.M., KY). Can you imagine the jollies some sailor is getting concocting all of these tactical ID's?-- Ed.

12518.5: GFMS, British ship **Canterbury Star** wkg Portishead R. in ARQ at 1210 (Thompson, UK).

12693: 78IJU, a Spanish Navrad w/RYRY & clg 75RQA at 1436, 100R (Thompson, UK).

12773.5: 5F tfc at 1112, 425/50R (Kneitel, NY).

12886.5: WLO, Mobile R., AL w/wx in FEC at 1448 (Ed.).

13074: FFL, St. Lys R., France clg CQ in FEC, foll by tfc list at 1002 (Thompson, UK).

13095: SVS, Athens R., Greece w/nx & sports scores in possible anglicized Greek, FEC at 1309 (Thompson, UK).

13099.5: UXN, Arkhangelsk R., USSR w/tfc in FEC at 1306 (Thompson, UK).

13415.3: PCW1, MFA The Hague, Netherlands w/ARQ marker at 1806 (Agnew, DE). Assume this was ARQ phasing sig + CW ID-- Ed.

13432.3: ZKX, Aukland Navrad, New Zealand w/RYRY & foxes (see Fig. 4) at 1140, 850/75R (Ed.).

13540.3: LRO81, TELAM, Buenos Aires, Argentina w/nx in SS at 0025, 850/50R (Ed.).

13564.7: Un-ID sta w/foxes & count at 0123, FDM 85/50R (Kneitel, NY).

13580.2: HBD20, MFA Berne, Switzerland w/5L tfc to embassies worldwide at 1740, ARQ (Ed.). Same sta on 13585 at 1605 w/nx in GG, ARQ (Thompson, UK).

13610: 3VF40, TAP Tunis, Tunisia w/nx in FF at 1616, 50R (Thompson, UK).

13664.5: 6VU73, Dakar Meteo, Senegal w/coded wx at 0023, 500/50R (Ed.).

13737: 5YD, Nairobi Aero, Kenya w/RYRY at 2238, 50R (Thompson, UK), W/svc msg requesting overflight authorization, 500/50N at 2102 (Zaid, WI).

13738: 71HGE, guess who, w/foxes, RYRY & SGSG at 1029, 850/75R (Kneitel, NY).

13752: HZJ, Jeddah Meteo, Saudi Arabia w/coded wx at 1624, 50R (Thompson, UK).

13779: BCA95, PTT Shanghai, PRC w/RYRY at 2234, 50N (Thompson, UK).

13936: DHO91, MFA Bonn, FRG clg DHO31 at 1509, then crypto, 170/75R (Ed.).

13979.5: CLP1, MFA Havana, Cuba w/crypto after ZZZZZ to Embacuba Panama at 1548, 425/75N, then cables in SS, 425/50N (Ed.).

14452: ATCC (KCNA) Pyongyang, N. Korea w/nx in FF at 1305, 250/50R. Is this a new freq? (Williams, CO). My logs indicate no-- Ed.

14495.2: D4B, Amilcar Cabral Air, Sal, Cape Verde Islands, w/RYRY at 1920, 425/50N (Kneitel).

14534: Un-ID sta idling in ARQ at 1120, sent selcall "VVSQ" (Thompson, UK).

14605.2: MKD, RAF Akrotiri, Cyprus w/RYI's & foxes at 1843, 325/50R (Williams, CO).

14630.5: ISX46, ANSA Rome, Italy w/RYRY & freq list, 50R at 1101 (Thompson, UK).

14760.2: BAT93, XINHUA Beijing, PRC w/nx in EE at 1057, 425/50R (Ed.).

14784.7: ATP65, MEA New Delhi, India w/nx in EE at 1545, 425/50N (Ed).

14815: Un-ID w/5F tfc, 75R at 1037. Also sends "QSY 20980" several times. I listened there but nothing heard (Thompson, UK). Both the Hungarian & GDR embassies in Havana have been noted here. The baud rate you report points to GDR, the callsign of which is Y7L36-- Ed.

14825: Y2V25, ADN Berlin, GDR w/tape reading XXXX BR, XXXX BR then YRYR at 1154, 425/50N, foll by nx in AA at 1156, datelined IYQC. BR is AA for ADN, IYQC is AA for Berlin (Ed.).

15667.3: FDY, FAF Orleans, France w/RYRY & le brick at 1230, 425/50R (Ed.).

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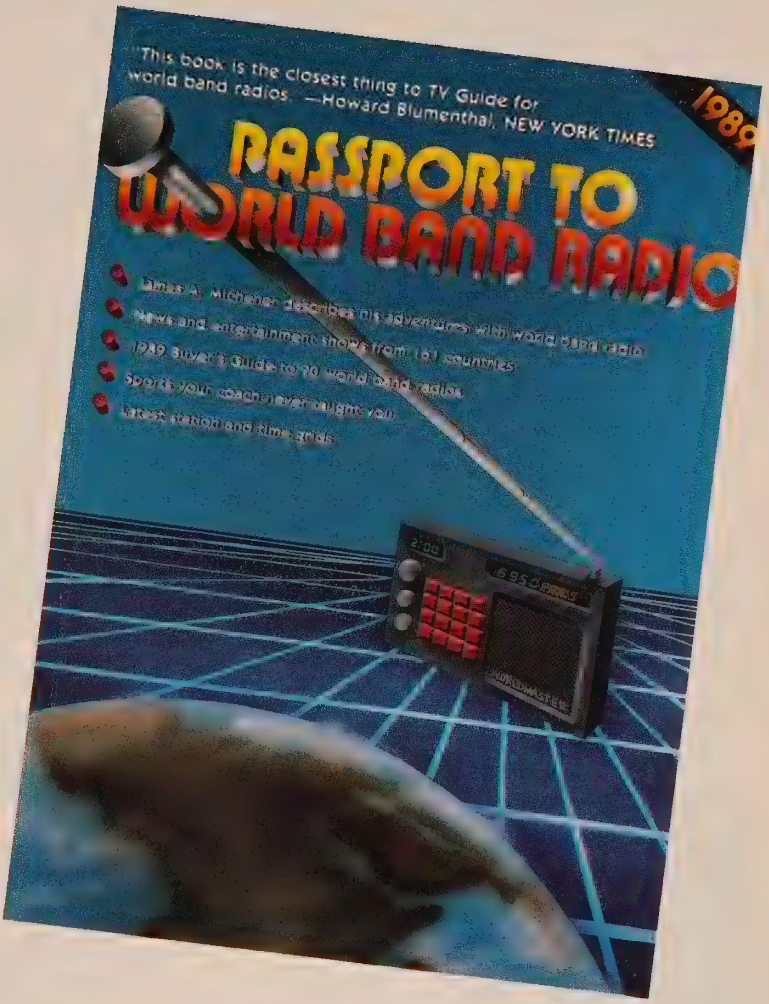
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15670: HGM36, MTI Budapest, Hungary w/nx in SS at 1637, 425/50N (Ed.).

15708: Un-ID w/garbled (possible) Dutch tfc at 1121, 425/50R (Ed.).

15712: 9HY15, DW Cyclops, Malta w/data & GG Telex at 1110, 425/50N (Ed.).

15715: LZI3, PTT Sofia, Bulgaria w/Telexes in EE to PTT Beijing at 1411, 425/50N (Ed.).

15715.7: VOA Greenville, NC w/RYRY & msg to VOA Kavala at 1341 & RYRY to Rhodes at 1343 (Ed.).

15717: VOA Greenville, NC w/RYRY to VOA Rhodes at 1351, 85/75N (Ed.).

15717.7: Un-ID w/garbled tfc, poss Romanized JJ at 1142, ARQ (Ed.).

15730: MFA Warsaw, Poland w/Telex in Polish to several embassies at 1600, 425/75N (Ed.).

15752.7: CNM66X2, MAP Rabat, Morocco w/bc sked at 1526, 425/50R, then nx/FF beamed to NA at 1533 (Ed.).

15780: USLRC (Firestone), Akron, OH w/Telexes in FF to ELE25, Firestone Plantation, Harbel, Liberia at 1802. ARQ (Ed.).

15873: P6Z, MFA Paris, France w/tfc in FF re assistance in transporting diplo pouches. Was 425/75R at 1604 (Williams, CO).

15969.2: Un-ID idling in ARQ for a long time after 1321, then sent HVW ET SAN JOSE, foll by more idling & off at 1353 (Ed.).

15970 & 19003: Poss Polish tfc w/many Z signals at 1808, 500/50N. Sta on 19 MHz then shifted to plaintext while other sent crypto. Both in op at same time (Williams, CO).

16016.2: LZG7, MFA Sofia, Bulgaria w/crypto to Vienna, Berne & Paris at 1233, 850/75N (Ed.).

16050: RCE54, TASS Moscow, USSR w/nx in EE at 1447, 425/50R (Ed.).

16119.8: HBD20, MFA Berne, Switzerland w/5L msg to embassies in 8 world capitals at 1330, ARQ (Ed.).

16135.3: PL Havana, Cuba w/RYRY/foxes/count at 2003, 425/50R (Kneitel, NY).

16245.3//16246.7//16248: VOA Tangier, Morocco w/RYRY to VOA Greenville at 1511, 85/75N. The 3rd freq had s/off msgs (Ed.).

16265: 9VF206, ANSA Singapore w/RYRY & sked at 1728, 850/50N (Williams, CO).

16268: Un-ID sta w/5L tfc at 1211, 425/50N (Kneitel, NY).

16288: 5KM, Bogota Navrad, Colombia w/RYRY & SGSG at 1802, 425/75R (Williams, CO).

16300: RMD59, APN Moscow, USSR w/nx in SS at 1231, 425/100R (Kneitel, NY).

16394: OMZ, MFA Prague, Czechoslovakia w/tfc to Washington at 1354, 425/75N (Ed.); Same w/Czech text at 1338 (Kneitel, NY).

16458.2: Un-ID w/lengthy 5L msg at 2200, 425/50R. Who is this? (Zaid, WI). Possibly GDR embassy in Havana, as logged here in the past-- Ed.

16667.6: S6DY, ship **Oberon** w/Telex sent from Panama Canal enroute Los Angeles & Japan, ARQ at 2045 (Zaid, WI). It's a bulk carrier flying the flag of Singapore-- Ed.

16676.5: D5TZ, Liberian tanker **Birdie** w/Telex in ARQ at 1646 (Zaid, WI).

17228: UAT, Moscow R., USSR w/tfc in RR at 1908, ARQ (Ed.).

17363: 5YE, Nairobi Meteo, Kenya w/coded wx at 2049, 850/75R (Williams, CO).

17384: Un-ID sta at 1845 w/SS & 5L tfc, msg header was "ARGL--RLWEI" & (((999))). Announced tfc was urgent (IMEDIATA) & s/off w/FIN DEL CABLE, 425/50N (Kneitel, NY).

17414.8: Y7A37/Y7A49/Y7A57/Y7K33, MFA Berlin, GDR w/RYRY at 1255 & into crypto at 1301, was 425/100N (Kneitel, NY).

17468.2: PWZ33, Rio de Janeiro Navrad, Brazil w/RYRY & SGSG at 2227, 850/75R (Harold Manthey, NY).

17520.3: HSW61, Bangkok Meteo, Thailand w/coded wx at 1546, 750/50N. Faded by 1625 (Ed.).

17522.2: YWM1, Maracaibo Navrad, Venezuela w/RYRY & SGSG & clg PWZ33 at 2233, 850/75N (Manthey, NY).

17526: OLV3, CTK Prague, Czechoslovakia w/nx in EE at 1710, 425/50N (Ed).

17598: YBU, un-ID sta, w/RYRY & 5L tfc at 1322, 425/75N (Kneitel, NY).

18049: OTV & BOZ, un-ID's, w/Telex in EE at 2040, 850/75R, then SSB comms in SS to 2045 (Williams, CO). One possibility logged here in past is LOL, Buenos Aires Navrad, Argentina-- Ed.

18249: CLP1, MFA Havana, Cuba w/crypto to Embacuba, Peru at 1421, 500/75N (Williams, CO).

18363: 9PL, Kinshasa Aero, Zaire w/RYRY at 1928, 425/50R (Agnew, DE).

18363.4: VOA Munich, FRG w/RYRY to VOA Greenville at 1417, 85/75N (Williams, CO).

18388.5: 5AF, Tripoli Aero, Libya w/coded wx at 1548, + NOTAMS in EE re balloon launchings, 315/50R (Williams, CO).

18471.8: Un-ID w/RYRY at 1145, 50N (Williams, CO). An old haunt of CLP1, MFA Havana-- Ed.

18517.7: AFP Paris w/nx & sports 0407-0516, all FF, FDM 85/50N. Appears to be a new freq for AFP (Williams, CO). It is-- Ed.

18544: STK, Khartoum Aero, Sudan w/RYRY at 2242, 425/50R (Ed.).

18602.5: LOL, Buenos Aires Navrad, Argentina w/tfc to HDN (Quito Navrad, Ecuador) at 2025, 425/75N (Gleitz, PA).

18627: UN-ID sta w/nx in SS at 1741, 425/50N (J.M., KY). Probably Prensaminrex, Havana-- Ed.

18697.5: DFS70L3, DPA Hamburg, FRG w/nx in EE at 1123, 425/50N (Kneitel, NY).

19227: "DFZG," MFA Belgrade, Yugoslavia w/RYRY & a 3F msg "for all" at 1426, 425/75N (Ed.).

19238: Y7L36, GDR Embassy, Havana, Cuba w/RYRY & crypto at 1836, 850/50R (Kneitel, NY).

19390: Y7A76, MFA Berlin, GDR w/RYRY, GG text & 5L msgs at 1401, 230/50R (Kneitel, NY).

19405: FSB, Interpol HQ, Paris, France relaying a Telex from Interpol in FRG to Interpol Brazil, ARQ at 1716 (Ed.).

19443: Y7A77, MFA Berlin, GDR at 1408 w/GG text, 425/50R (Kneitel, NY).

19529: JMG, Tokyo, Japan w/wx bc in EE at 1458, 850/50R (Ed.).

19639.5: CLP1, MFA Havana, Cuba w/5F msg at 1800, 425/50N (Ed.).

19756.5: MFA Ankara, Turkey w/tfc re govt employees goofing off & other related fed tidbits, foll by TTK nx. Was 170/50R at 1513 (Ed.).

20035.2: MFA Havana w/Prensaminrex nx in SS at 1542, 425/50N (Ed.).

20078.5: FTU8B, DIPLO Paris, France w/nx in SS at 1653, 425/50N (Zaid, WI).

20327.1: 6VK221, PANA Dakar, Senegal w/nx in FF at 1549, 325/50R (Manthey, NY).

20350.3: NBA, USN Balboa, Panama w/RYRY & SGSG at 1454, 850/75R (Manthey, NY).

20423.5: CXR, Montevideo Navrad, Uruguay
5KM at 2003, 1200/75R (Gleitz, PA).
: IRS24, ANSA Rome, Italy w/nx in FF at
/50N (Ed.).
: CLP45, Embacuba Luanda, Angola
& Telexes in EE/SS to Havana at 1418,
425/100N (Ed.).

22197.4: H3RR, the Panamanian pontoon vessel **Pearl Marine** at s/off in ARQ at 1415 (Ed.).

FAX Loggings
(All by Tom Kneitel, NY)

2148.2: Un-ID sta w/wx chart at 0129, 120/576.

3357: NAM, USN Norfolk, VA w/FAX test chart at 0255, 120/576.

5785: NGR, USN Kato Soli, Greece w/wx chart at 0433, 120/576.

5850: OXT, Copenhagen, Denmark w/ice chart at 0047, 120/576.

8080: NAM, USN Norfolk, VA w/sked chart at 0012, 120/576.

9241.5: LRO84, DyN Buenos Aires, Argentina w/news pix at 2340, 60/288.

10905.1: NPM, USN Honolulu, HI w/Eastern Pacific wx chart at 1055, 120/576.

13470: RKU71, Moscow Meteo, USSR w/chart at 0106, 120/576.

13510: CFH, Canadian Forces, Halifax, NS w/charts at 1211, 120/576.

13706: NPM, USN Honolulu, HI w/Eastern Pacific wx chart at 1238, 120/576.

13920: AXM35, Canberra Meteo, Australia w/wx chart of southern hemisphere at 1038, 120/576.

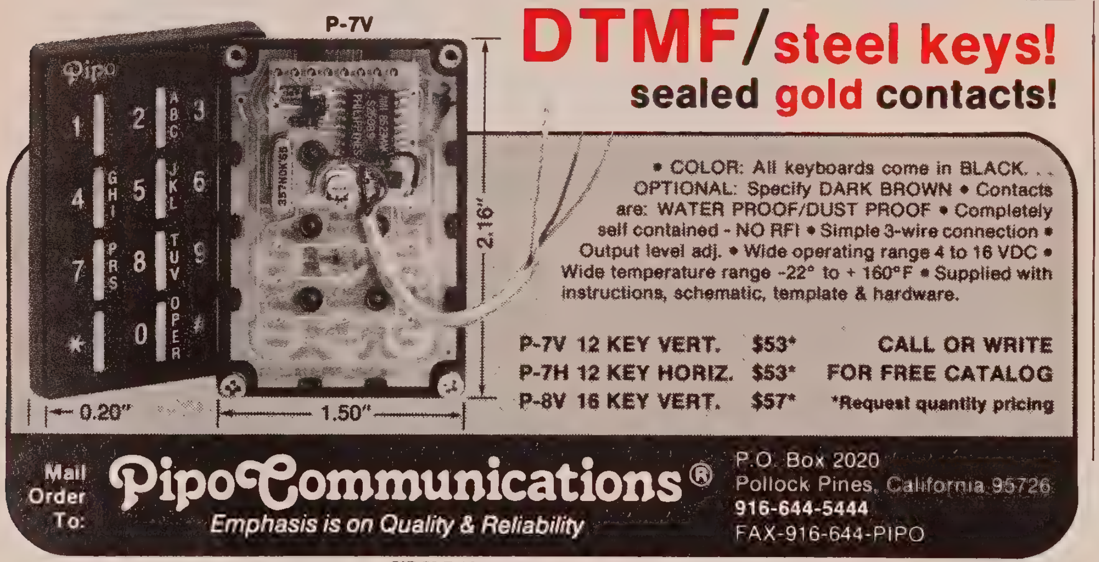
14982.5: RBV76, Tashkent Meteo, Uzbek SSR, w/wx chart at 1148, 120/576.

15950: RBI77, Moscow Meteo, USSR w/chart at 1315, 120/576.

17069.5: JJC, Tokyo, Japan w/JJ text at 1245, 60/288.

17672: LQZ67, AP Buenos Aires, Argentina w/nx photos at 1848, 60/288.

18130: JMJ5, Tokyo Meteo, Japan w/charts at 1335, 120/576. **PC**



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Here's news of the broadcasters: On the AM dial, WMNZ, of Montezuma, GA (1050 kHz) wants to change its transmitter location; WEKO, Cabo Rojo, PR (930 kHz) seeks to up its power at night to almost 4-1/1 kW; KISK, Reno, NV (1550 kHz) hopes to drop its power from 10 kW to one quarter of that and use an omnidirectional antenna system.

In Oklahoma, KOKC at Guthrie (1490 kHz) would like to operate with 1 kW during the night hours. WSEA, Georgetwon, DE (900 kHz) was given FCC permission to up its daytime power to 10 kW, and begin night operation with 500 watts, also change its antenna system. WTWF, in Woodville, FL (1160 kHz) has requested permission to relocate to Tallahassee and run 1 kW at night. KMOA, Kensett, AR hopes to increase its daytime power to 10 kW. WYLO, Jackson, WI (540 kHz) would like to stop running only 34 watts at night and run up the transmitter to 500 watts. WNCR, at St. Pauls, NC (1080 kHz) wants to move its transmitter, change its antenna system, and beginning running 50 kW days, 25 kW nights. WAPO, Jasper, TN (820 kHz) hopes to start running 10 kW. In an interesting move, KSSA, Plano, TX (1600 kHz) wants to establish an experimental synchronized amplifier booster transmitter (on 1600 kHz) at (5 kW days, 1 kW at night). KSIV, Clayton, MO (1320 kHz) seeking permission to operate at night with 270 watts. WMGA, Moultrie, GA (1130 kHz) seeking to move to Riverside, GA, change frequency to 580 kHz and run 900 watts (days)

In Golden Meadow, LA station KLEB (1600 kHz) would like to put up a new antenna and add 250 watt night operation. WKXJ in Campbellsville, KY became WTCO . . . WINN, North Vernon, IN changed callsigns WNVI . . . KAVR of Apple Valley, CA is now KZXY . . . WHZT of Houghton Lake, MI now calling itself WUPS . . . WLFA, Lafayette, GA switched calls to WQCH.

On FM channels: WZZR, Stuart, FL (92.7 MHz) wants to move its transmitter and antenna and run 50 kW ERP. Station WCXL, Vero Beach, FL (101.7 MHz) hopes to change frequency to 99.7 MHz, and change its transmitter/antenna site. WVRY, Waverly, TN (104.9 MHz) looking to change frequency to 105.1 MHz. WFCS, New Britain, CT (97.9 MHz) given the OK to move to 105.3 MHz. KMDL, Kaplan, LA (97.7 MHz) approved for a move to 97.3 MHz. KXKK, Lordsburg, NM (97.7 MHz) approved to change to 97.9 MHz. WUAG, Greensboro, NC (106.1 MHz) hopping over to 103.1 MHz. WDUB, Granville, OH (90.9 MHz) slid up the band to 91.1 MHz.

KAFM in Payson, AZ changed its call to KRIM . . . WQOD of Youngstown, OH turned into WBBG . . . KSMP, Paris, TX now calling itself KOYN . . . KLDR-FM, Delta, CO operating under the new callsign KKLY . . . KMDK in Denver, CO picked a new call: KFTO . . . KEZF, Idaho Falls, ID now using the callsign KSIF.

Look for new FM broadcasters to be showing up soon on the following frequencies: 93.7 Mhz in Sebastopol, CA . . . 99.7 MHz in Vero Beach, FL . . . 106.3 MHz in South Bend, IN . . . 102.3 Mhz in Truro, MA . . . 99.5 MHz in Las Cruces, NM . . . 90.3 MHz in Lawton, OK . . . 93.7 MHz in New Iberia, LA . . . 91.5 MHz in Bradenton, FL . . . 93.7 MHz in Tice, FL . . . 91.1 MHz in Kankakee, IL . . . 93.9 Mhz in Columbia, MO . . . 93.7 MHz in Clyde, NY . . . and 93.7 MHz in Marked Tree, AR. PC

LISTENING POST

BY GERRY L. DEXTER

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

A couple of months ago, Radio RSA in South Africa made a significant change in their English programming schedule to North America. This change seems to have set in motion, for now, changes in other stations. Let's take a look.

The Voice of Germany announced, that as of last month, it has began a new service for English speaking listeners around the world. This move involves taking the three current English services (to Africa, Asia and North America) and combine them into one common English service. Duetsche Welle says this move aims for greater efficiency and will provide for better, and more current coverage of news and world affairs. The new service does not broadcast the same to each area, though. Differences are reflected in the program content as antennas are switched from region to region. Favorite programs of listeners in each continent are retained, but there are a number of new features, too.

Duetsche Welle says the changes bring more on-the-spot reports, more interviews and a re-activation of DW's network of correspondents and stringers around the world to cover the news. Reporting on German affairs will also increase significantly. And, says DW, in the future, listeners in Asia will hear more about Africa, those in Africa, more about North America. DW is hoping to serve as a bridge between the three continents which they serve.

In the meantime, Radio Polonia is heading in another direction. An item in *DX Ontario*, says that the station ended its English service to North America. Reception in most parts of North America had been poor to fair for many years. A nightly concert of classical music, once at 2305, has been pushed up to 2330, to make room for a general English program. Ivan Grishin, in whose column the item appears, suggests 7270 for English from Poland at this time.

If you're looking for any of the regional Papua New Guinea stations, your chances of hearing them should be getting better, as more of the stations go to 10 Kilowatts of power. Many had been using just two, previously.

We recently made note of the ending of a single sideband broadcasts from Radio Sweden from the transmitter at Varberg. There's been a postponement, and the broadcasts will now continue at least until the first of the year. Listener protests are said to have helped save the service, for the time being, anyway. This transmitter carries the home service in Swedish at 0200-0300 on 17840, 0500-0900 on 17770, 0900-1600 on 21555, 1600-1800 on 15435, 1800-2030 on 15420 and 2330-0000 on 17840.

This is the Chinese year of the Dragon, as well as the 12th anniversary of English service of Radio Veritas Asia in the Philippines. Actually, we don't see the connection, but the station tied the two together in its English service newsletter. Best reception of English from Radio Veritas is likely to be at 1500-1530 to Asia on 11820 and 15220. A long awaited Hindi service has recently been added by Veritas.

Lotsa Letters: Michelle Shute in Pensacola, FL was in Washington, and decided to visit the VOA studios. She got to see a live news broadcast, announcers on the air in various languages, news reports being processed and so on. For obvious security reasons, the VOA does not allow photos of its studios or announcers. Michelle recently received a couple of QSL's. One was from SABC in South Africa, the other from the National Standards Commission which operates the new Australian time station. The address is P.O. Box 282, North Ryde, Sydney, NSW 2113, Australia.

Speaking of Australia, Gary Emerson of Golden, CO was just there last March fulfilling a decades long desire to tour Radio Australia. Gary tells us that they are always happy to have visitors, and are preparing special programs for the station's 50th anniversary. There will be special QSL's for the event, too!

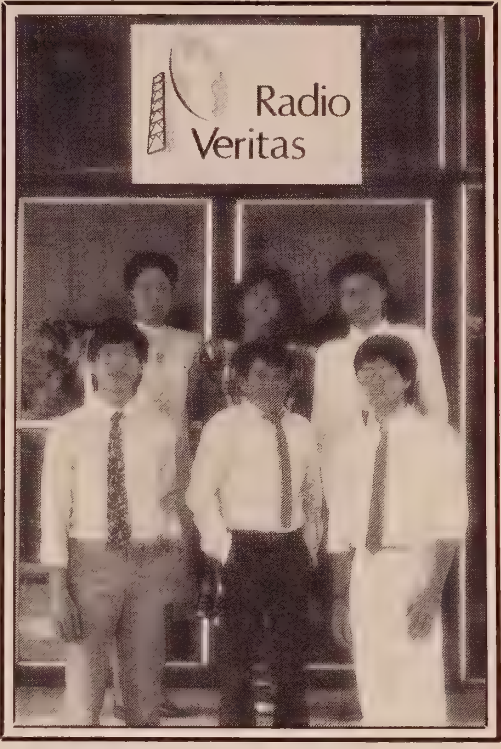
Matthew W. Messinger in Rochester, NY is looking for any SWL programs available for the Apple IIc computer. The computer column in *Friendx*, the monthly bulletin of the North American Shortwave Association, says the ARRL has a list of computer programs available "for almost every computer known to man". Drop a SASE to the ARRL at Dept. PX, 225 Main St., Newington, CT 06111. Apparently, all of the programs listed are available without cost. As for how fresh reports to this column should be, Matt, please make them no older then one month of the date you send them in.

Mike Mostafenejad is a first time reporter this month, even though he's been a listener since the mid-1960's when he lived in Devonshire, England. Presently, he lives in Napa, CA and uses a Yaesu FRG-7 with a sloper antenna.

One of our shack shots this month belongs to Mike Slaughter of Chillicothe, Ohio who uses a Kenwood R-2000 but notes that he also has a slew of assorted military receivers and field phones which are not pictured.

Thanks to Joseph Cafferky, Jr., of Mattapan, MA for sending along a copy of Radio Australia schedule.

Michael A. Kuna, MD, of Chicago Ridge, Illinois says he's been a SWL since the mid-1960's. Mike is looking for a club in the area to join. Try the Chicago Area DX Club, Mike. They publish *DX Chicago* every month, and have a number of banquets and cookouts throughout the year. Headquarters is c/o Joe Farley, 5252 Lee Avenue, Downer's Grove, Illinois 60515.



The English language staff at Radio Veritas Asia in the Philippines celebrates a dozen years.

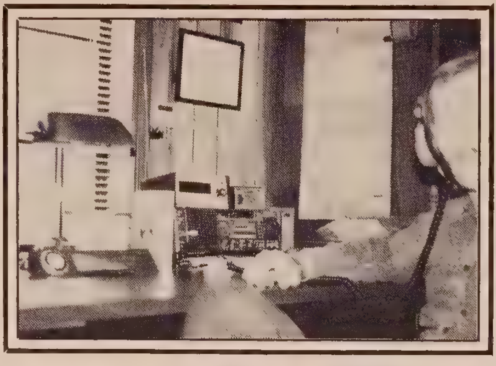
Antennas at the Radio Japan—Yamata transmitting site.

Is it rare for AFRTS to send a full date QSL to a US citizen wonders Justin McClure of Cambridge, Iowa. It seems to depend upon the shifting bureaucratic moods, Justin. There have been times when AFRTS would not QSL at all to US citizens, while other times, a prepared card would work.

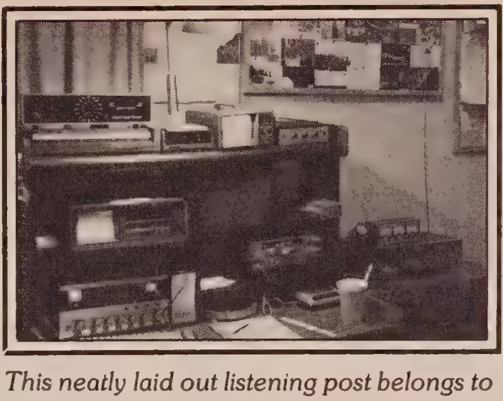
Another new reporter is Thomas Dettman of Elgin, Illinois, who is afraid to QSL because of the horror stories he has heard about the FBI investigating people who receive too much foreign mail. Don't let that hold you back, Thomas. Those cases are very few and far between, isolated incidents. Thomas also reminds readers that, when buying those very expensive International Reply Coupons, be sure the postal clerk stamps the correct side—the left hand circle, not the right. Otherwise, they will be rendered useless. Thanks for the picture of the Radio Japan—Yamata transmitting antennas, Thomas. Incidentally, see the next paragraph about your log reports.

Thanks to all who checked in this month and please continue to do so regularly. Your loggings are always welcome, but please double space between items and include your last name and state abbreviation after each one. Shack photos, schedules, clippings, station literature, extra QSL's you don't need returned, comments and questions are always appreciated. We look forward to hearing from you on a regular basis.

Here are the loggings.



Here's the shack of Mike Slaughter in Chillicothe, Ohio—and part of Mike, too.



This neatly laid out listening post belongs to Jerome Jacques of Omaha, Nebraska.

SWBC Loggings
(All Times Are UTC)
(Language is EE except as noted.)

Alaska: KNLS, 11860 at 0702 w/IS, ID in RR, into rx pgrn in RR (Johnson, AZ).

Albania: R. Tirana, 7065 at 0238 (Hall, GA); 9480 at 2147-2155 s/off (Benoit, MA); 9500 at 0345 (Johnson, AZ).

Antarctica: R. Nacional Arcangel San Gabriel, 15474 in SS at 2210, YL w/ID, weak but audible, many ID's (Mayo, NE).

Argentina: RAE, 11710 at 1125 in SS (Northrup).

LOL, 15000 time sta under WWV in SS (Mayo).

Ascension Island: BBC relay, 9515 at 0220 (Zirkelbach, CA); 17880 at 1740 in EE going into poss Afrikaans at 1745 (Johnson, AZ).

Australia: VL8A, Alice Springs at 1200 on 2310 (Emerson, CO).

ABC Brisbane, 4920 at 0932 w/country mx (Garcia, MD).

R. Australia, 5995//6080 at 0808 (Garcia, MD); 9655 at 0650 (Messinger, NY); 9580 at 0755 (Cafferky, MA); At 1521 (Ross, WA); 11715 at 0440 (Johnson, AZ); 17795 at 0002 (Benoit, MA); At 0600 (Jacques, NE).

Austria: R. Austria Int'l, 9875 at 0035 (Messinger, NY); 15410 at 0456 (Johnson, AZ).

Belgium: BRT, 9925 at 2330 w/jingle & s/on (Benoit, MA).

Benin: ORTB Contonou, 4870 at 2217 in FF (Garcia, MD); 0554 in FF (Gilbert, CA).

Botswana: R. Botswana, 7255 at 0520 ending nx & into mx. Nigeria not noted but back next day (Johnson, AZ).

Brazil: Radiobras, 11745 at 0234 (Ross, WA).

R. Cultura Foz de Iguacu, in PP w/mx, full ID 0132 (Garcia, MD). Likely a relay for some reason via Radiobras-- Ed.

R. Nacional Amazonia, 11780 in PP at 2134 (Ross, WA).

R. Universo, Curitiba, 6060 in PP at 0822 (Garcia, MD).

R. Guaiba, Pto. Alegre, 6000 at 0812 w/sambas, ID 0814 (Garcia, MD).

R. Anhanguera, Goiania, 4915 in PP w/sports at 0020 (Garcia, MD).

R. Clube Paranense, Curitiba, 6040 in PP at 0818 (Garcia, MD).

R. Cultura do Para, 5045 in PP at 0856 (Gilbert, CA).

R. Bandeirantes, Sao Paulo, 9645 at 0418; 11925 at 0201 in PP (Johnson, AZ).

Bulgaria: R. Sofia, 7115 at 0300 (Minard, NE); 11750 at 0259 w/IS, ID into EE (Johnson, AZ); 11950 at 2214 (Benoit, MA).

Burkina Faso: R. Burkina, 4815 at 0530 s/on in FF (Gilbert, CA).

Cameroon: R. Cameroon, Yaounde, 4850 at 0445 w/local pops (Messinger, NY).

R. Douala, 4795 at 2205 in FF, ID 2211 (Garcia, MD).

Canada: RCI, 5960 nx at 2205 (Cafferky, MA); 9755 at 0017 (Benoit, MA); 15150 at 2130 (Johnson, AZ); 15325 at 2115 (Zirkelbach, CA); 17820 at 1730 in Czech (Mostafanejad, CA).

CBC N. Que. Svc, 9625 at 1605 (Messinger, NY); At 0230 (Zirkelbach, CA); 11720 at 1402 (Benoit)

Central African Rep.: RTV Bangui, 5034 at 2250 in FF w/African mx, ID & off w/anthem (Garcia).

Chile: R. Nacional, 9550//15140 in SS at 0220 (Minard, NE); 15140 at 2154 (Ross, WA).

China: R. Beijing (var. sites), 9745 at 2041 (Benoit, MA); 9770 at 0040 (Messinger, NY); 11600 at 1547 (Ross, WA); 11715 at 0030 (Minard, NE); 11755 at 1208 (Mayo, NE); 15100 in SS at 0116, 15600 in CC at 0310, 17650 in SS at 0201 (Johnson, AZ); 15455 at 2350 in SS to off 2355 (Garcia, MD).

V. of Jinling, 4875 at 1250 in CC (Emerson, CO).

V. of the Strait, 3200 in CC at 1212 (Emerson)

Colombia: R. Sutatenza, 5095 at 0430 w/mx, anncts in SS (Mostafanejad, CA); 0025 w/ID **La Cadena Sutatenza** (Garcia, MD).

R. Guatapuri, Valledupar, 4915 in SS at 0302 w/ID, mention of Grupo Radial Colombiana, commercials, & live bc from a festival (Garcia, MD).

Caracol Neiva, 4945 at 0827 in SS (Gilbert, CA).

R. Nacional, 11910 at 1140 in SS (Northrup, CT).

Cook Islands: R. Cook Islands, 11760 at 0547 polynesian mx, un-ID lang (Shute, FL).

Costa Rica: TIFC/Faro del Caribe, 5055 at 0548 w/rx pgm in SS (Carcia, MD).

R. for Peace Int'l., 13660 at 2338, commentary, ID by YL (Benoit, MA).

R. Reloj, 4832 at 0316 in SS (Mierzwinski, PA).

Cuba: R. Havana, 5965 at 0430 (Mostafanejad, CA); 6090 in SS at 1004 (Gilbert, CA); 9650 at 0020 (Cafferky, MA); 9655 at 0230 (Zirkelbach, CA); 11760 in SS at 1532 (Ross, WA); 11795 at 0129 in SS (Johnson, AZ).

Czechoslovakia: R. Prague, 5930 at 0257 repeating ID, into EE (Cafferky, MA); 6055 at 0124 (Benoit, MA); 11685 in FF at 2100 (Ross, WA); 11990 at 0158 (Minard, ME); 21505 at 1617 (Johnson)

Denmark: R. Denmark, 17785 at 2135 in Danish (Minard, NE); 11845 at 2145 in Danish w/EE ID at 2157 (Messinger, NY).

Dominican Rep.: R. Clarin, 11700 in SS at 1633, **Radio Clarin Informando** nx ID (Garcia, MD).

East Germany: RBI, 6080 at 0120, 17880 at 1326 (Benoit, MA); 11785 at 0135 in SS (Johnson, AZ; 15240 at 1415 (Johns, TX).

Ecuador: R. Jesus del Gran Poder, 5050 at 0950 in SS w/rx mx, personal messages (Garcia, MD).

R. Quito, 4920 in SS 0428, ID **Radio Quito, La Voz de la Capital**, many sta promos (Atkins, WA).

La V. del Upano, Macas, 5040 at 2344 in SS w/school lessons, off 2353 (Garcia, MD).

HCJB, 15115 at 0038 (Benoit, MA); 15270 at 1925; 17790 at 2135 (Messinger, NY).

Egypt: R. Cairo, 9475 at 0230 w/current events pgm (Hall, GA); 15335 at 1933 in Fulani (Ross, WA).

England: BBC, 7120 at 0400, 7325 at 2145, 7185 at 0415, 17810 at 1525, 18080 at 1715, 21470 at 1450 (Messinger, NY); 5975 at 0330, 9740 at 1400/1600 (Mostafanejad, CA); 9410 at 0335 (Johnson, AZ); 11775 at 1730 s/off (Hall, GA); 15235 under Libya w/ID 0345, into AA (Johnson, AZ).

France: RFI, 17620 in FF at 1910 (Shute, FL).

French Guinea: RFI relay, 21645 in FF at 2136 (Atkins, WA); 11670 at 0030 in SS (Benoit, MA); 9800 at 0335 (Ross, WA).

Finland: R. Finland Int'l., 11785 at 0230 w/**Northern Report**, wx, press review, sports, anthem & off 0258 (Johnson, AZ); 15185 w/**Literature on the Air** 1400 (Benoit, MA); 15400 at 1305 (Hall, GA).

Gabon: Africa #1, 4890 at 0430 in FF (Mostafanejad, CA); 11940 at 0720 w/Afro pops, in FF (Johnson, AZ); 15475 at 1835 in FF w/nx headlines in EE 1855 (Messinger, NY).

Ghana: GBC, 3366 at 0530 w/EZ listening mx, drum s/on (Garcia, MD); 4915 at 0536 w/ID for R. One svc & rx recitations, local mx & lang anncts, ID 0559 in EE, time, nx (Mayo, ME).

Greece: V. of Greece, 9395 at 2333, YL w/ID, nx (Benoit, MA); 7430//9420 in Greek (Minard, NE); 9905 at 0419 (presume Greek-- Ed.), 11595 at 0440 (ditto) (Johnson, AZ); 11645 at 1927 (Ross, WA); 15630 at 1240 w/nx (Mayo, ME).

Guam: KTWR, 11805 at 1030 (Johns, TX).

Guinea: R. National, Conakry in FF & vernaculars at 15310 at 1845 (Garcia, MD).

Honduras: Sani R., Pto. Lempira, 4755 at 0032 in SS w/birthday greetings & mx requests (Garcia)

HRVC, 4820 at 0231 w/mx (Gilbert, CA). SS?--Ed

Hong Kong: BBC relay, 15435 w/time check at 0000. No Hong Kong site anncd but fits sked (Mayo, NE); 1150 w/sports (Gilbert, CA).

Hungary: R. Budapest, 9835 at 0211 (Gilbert, CA); 11910 at 0300 changes in pgms & freqs around the world (Garcia, MD).

Iceland: ISBS, Reykjavik 13775 USB, 1215-1245 in Icelandic (15 minutes later on Saturdays) & takes a few mins for xmtr to warm up for good SSB stability. Some RTTY QRM (Mayo, ME).

India: AIR, Delhi, 4860 at 1250 (Emerson, CO); 9545 at 1330 w/nx & commentary (Johns, TX); 11620 at 2130 w/nx (Garcia, MD).

AIR, Gauhati, 3235 at 1230 (Emerson, CO).

Indonesia: V. of Indonesia, 11788 at 1500 (Johns).

R. Republik Indonesia, Ujung Padang, 4719 in Indonesian at 1258-1308, mx, short commercial, 5 pips & nx (Atkins, WA).

RRI Yogyakarta, 5046 in Indonesian at 1240 (Emerson, CO).

RRI Wamena, 4871 in Indonesian at 1250 (Emerson, CO).

Iran: VOIRI, 15084 at 1530 in Farsi (Mostafanejad, CA); At 1614 (Ross, WA); At 1904 (Shute, FL); 9022 in SS to 0230 s/off (Garcia, MD); 2027 w/mx, EE ID 2029, sked, address, into SS (Benoit, MA).

Iraq: R. Baghdad, 11755 at 0050 (Benoit, MA); 11810 at 0131, AA mx, address, sked. Also 15230 at 2018 in AA (Johnson, AZ).

Israel: V. of Israel, 9435 at 0002 (Hall, GA); 11655 at 0407, 12080 at 0411, 15485 at 1930 in FF, 17630 at 0401 (Johnson, AZ); 17685 at 1920 (Garcia).

Reshet Bet svc, 17555 in Hebrew/EE at 1150 (Garcia, MD).

Italy: RAI, 11800 at 2229 s/on under Japan; 0415 w/anthem, II; 11805 at 0829 w/IS; 11905 at 0404 ending nx; 15330 at 0544 in AA; 15385 w/IS at 0139 (Johnson, AZ).

Ivory Coast: RTV Ivorienne, 4940 in FF at 0601 s/on (Gilbert, CA); 11920 at 2207 w/mailbag in FF, call-ins, home scene & vernaculars (Garcia, MD).

Japan: R. Japan (via RCI), 5955 at 0338 in EE/JJ (Garcia, MD); 11815 at 1536 w/**DX Corner**

Abbreviations Used In Listening Post

AA	Arabic
BC	Broadcast/ing
CC	Chinese
EE	English
FF	French
GG	German
ID	Identification
IS	Interval Signal
JJ	Japanese
mx	Music
NA	North America/n
nx	News
OM	Male
pgm	Program
PP	Portuguese
RR	Russian
rx	Religion/ious
SA	South America/n
SS	Spanish
UTC	Coordinated Universal Time (ex-GMT)
v	Frequency varies
w/	With
WX	Weather
YL	Female
//	Parallel frequencies

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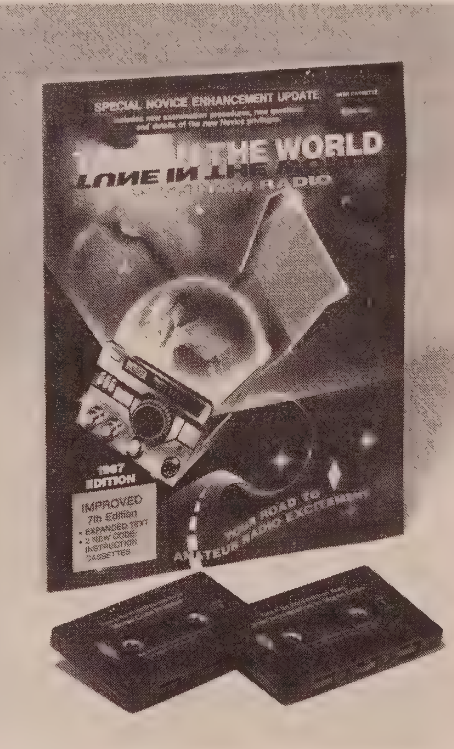
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NEWINGTON, CT 06111

CIRCLE 61 ON READER SERVICE CARD

(Ross, WA); At 1440 (Zirkelbach, CA) (via Gabon?-- Ed.); 151995 at 0338 (Johnson, AZ) (via Canada?-- Ed.); Via Gabon on 15235 at 0524 & 21700 at 1520 (Mayo, NE).

Kuwait: R. Kuwait, 15495 in AA at 2348 (Garcia, MD); 15505 w/"Special Arabic" pgm at 2004 (Minard, NE).

Lesotho: R. Lesotho, 4800 at 0450 w/pops, IS, nx at 0500 (Messinger, NY).

Libya: R. Jamahiriya/V. of Greater Arab Homeland, 11815 at 0250; 15415 in AA at 2215 (Messinger, NY); 15415 at 2238 (Atkins, WA).

Lithuanian SSR: R. Vilnius, 13645 at 2313 via R. Moscow's rig (Hafeli, BC).

Luxembourg: R. Luxembourg, 6090 at 0048 w/mx, promo for **Dateline,** wx, ID, freqs, rock (Benoit, MA); 15350 at 2355 in FF w/pops, ID, nx (Garcia, MD); At 0525 (Johnson, AZ).

Madagascar: R. Madagasikira, 9690 at 0911 in PP w/mx & talks. Tentative ID (Garcia, MD).

Malta DW relay sta, 13760 at 1200 s/on w/Malta site ID & into CC (Mayo, NE).

Mexico: R. Mexico Int'l., 9705 at 0130 in SS at 0130 in SS w/commentary & nx (Messinger, NY); 17765 in SS at 2150 (Garcia, MD); 0129 w/latin pops, promo, full ID (Atkins, WA).

Morocco: RTVM, 15355 in AA at 1544 (Ross, WA); At 0545 in AA (Hafeli, BC).

R. Medi Un, Nador, 9575 at 1952 in AA, ID in FF at 2000, nx in AA (Garcia, MD); 0056 in AA (Gilbert, CA).

Netherlands: R. Netherlands, 9850 at 0418, anthem 0423 & gone (Johnson, AZ); 9895 at 0015 (Messinger, NY); 17605 at 1855 (Garcia, MD).

Netherlands Antilles: R. Netherlands relay, 6020 at 0237 w/**Happy Station** pgm (Minard, ME); 0553 on 6165 (Cafferky, MA).

New Zealand: R. New Zealand, 15150 at 0353 (Ross, WA); At 0557 (Jacques, NE).

Nicaragua: V. of Nicaragua, 6100 at 0602 w/political stuff (Cafferky, MA).

Nigeria: V. of Nigeria, 7255 at 0505 w/headlines & local nx (Garcia, MD).

Northern Marianas: KYOI, Saipan, 9853 at 0330 (Minard, ME); 11900 at 1005 ID & pops (Johnson, AZ); 1030 w/pops (Johns, TX); At 1300 (Emerson, CO)); 17780 at 0606 (Jacques, NE); At 0715 (Hafeli)

North Korea: R. Pyongyang, 6250 in presumed Korean at 0922 (Gilbert, CA); 9977 at 1520 (Ross, WA); 17735 at 1127-1145 w/ID, talks (Mayo, ME); At 1100(Johns, TX); 11830 at 0803 w/sked, nx, QRM from Tahiti (Johnson, AZ); 15114 at 0038 (Hafeli)

Norway: R. Norway Int'l. (EE on Sun only), 9590 at 0757 in EE/NN; also 15230//15310 at 1956 (Shute, FL); 9665 at 0413 in NN, ID in EE (Gilbert, CA); 11850 at 0306, 11760 at 0420 NN/EE ID; 15165 at 0558 w/IS, ID & into NN (Johnson, AZ).

Papua New Guinea: NBC Port Moresby, 6020 in EE & un-ID lang, talks, poor level (Zirkelbach, CA). This freq almost never reported-- Ed.

R. New Ireland, 3905 in Pidgin w/island mx, OM anncrs, mentions of New Ireland around 1256 (Atlins, WA).

R. West Sepik, 3205 in Pidgin at 1215 (Emerson)

Paraguay: R. Nacional, 9735 in SS at 0030, promos for several stations, nx (Messinger, NY).

Peru: R. Union, 6118 at 0753 w/mx (Gilbert, CA). In SS-- Ed.

La V. de la Selva, 4825 at 1022 in SS (Gilbert).

R. Atalantida, 4790 at 0430 w/local mx, tentative ID in SS (Messinger, NY).

R. Tropical, 4935 at 1000 in SS about local agriculture, ID 1015 (Garcia, MD).

R. S. Martin 4810 at 0433 in SS w/US pops, ID (Goodlet, Cayman Islands).

Philippines: VOA relay, 11715 at 1209-1330 s/off & 15160 at 1408-1500 to SE Asia (s/off 1500), & 15425 at 1452-1500 (Mayo, NE).

Poland: R. Polonia, 9525 at 0334 in EE (Gilbert, CA); 15120 at 0100 in (poss) Polish, 0459 in un-ID lang, 0606 in FF (Johnson, AZ).

Portugal: R. Portugal, 9705 at 0230 in EE (Johns, TX); At 0357 (Jacques, NE); 11840 at 0233 (Johnson, AZ).

R. Renascenca, 9600 at 0213 in PP (Garcia, MD).

Romania: R. Bucharest, 5990 at 0200 (Minard, ME); 9510 at 0413 (Atkins, WA); 9570 at 0400 (Gilbert, CA); 9690 at 2101, 15250 at 1512 (Benoit, MA); 11940 at 1045 (Garcia, MD).

Saudi Arabia: BSKSA at 0410 on 15060 in un-ID lang, AA mx (Johnson, AZ).

Senegal: ORTS, 4890 in FF at 0658, talks & chants (Gilbert, CA).

Seychelles: FEBA, 15300 in AA at 0345 (Johns).

Singapore: SBC, 11940 w/EZ listening mx at 1500 & time check, nx in brief (Zirkelbach, CA).

Solomon Islands: SIBC, 5020 at 0855 in Pidgin (Gilbert, CA).

South Africa, Rep. of: Radio RSA, 9380//9625 at 0225 (Zirkelbach, CA); 6010//9580 at 0233 (Hall, GA); 11730 at 0256 (Minard, ME); 11845 at 0424 w/IS, ID in FF svc (Johnson, AZ); 17755 at 1510 w/**Africa Today** (Messinger, NY); 21590 at 1550 (Ross, WA).

Radio 5, 4880 w/rock, commercials, ID 0401 (Garcia, MD); At 0435 (Atkins, WA); At 0330 & 0430 (Mostafanejad, CA).

SABC, 3215 at 0330 w/mx & commercials in Afrikaans (Mostafanejad, CA).

South Korea: R. Korea, 9750 at 1350 w/promo for **Shortwave Feedback every Sunday** (Zirkelbach, CA); 15575 at 0120 in SS, ending at 0130 & into PP (Garcia, MD); 1300 w/nx & commentary (Jacques)

Spain: REE/Spanish Foreign R., 9630 at 0028 (Zirkelbach, CA); 7275 at 2130 w/nx & wx (Messinger, NY); 9630 at 0150 w/nx (Gilbert, CA); 11880 at 0109 w/nx, sports; 15125 at 0105 in SS; 17890 at 1647 in SS (Johnson, AZ); 17845 at 1847 in SS, off 1901 (Atkins, WA).

Sri Lanka: SLBC, 9720 at 1230 w/**Miracles** (Johns, TX).

Sweden: R. Sweden, 9695 at 2318 w/**Sweden Today** (Benoit, MA); 11705 at 0328 in poss II to 0329, then diff beam in EE, also 15390 at 0500 in Swedish (Johnson, AZ); 15346 at 1426 (Gilbert, CA).

Switzerland: Swiss R. Int'l., 9885 at 0415 w/nx (Gilbert, CA); //12035 at 0200 (Zirkelbach, CA); 21630 in GG at 1630; 12035 at 2100; 15340 at 1520 (Messinger, NY); 15430 at 1548 (Ross, WA); 17830 at 1333 (Benoit, MA).

Syria: R. Damascus, 11625 at 2055 (Ross, WA); 12085 at 1959 in FF, into EE 2004 (Benoit, MA); 15095 at 2156 w/AA mx, EE nx, off 2203 (Johnson, AZ).

Tanzania: R. Tanzania, 9684 at 0400 (Johns, TX)

Tahiti: 6135 at 0706 in FF (Johnson, AZ); 11825 FF at 0801 (Gilbert, CA); 15170 at 0135 in FF w/island mx, jazz 0202 (Benoit, MA); 0330 in Tahitian (Johns, TX); At 0600 (Emerson, CO); 0757 in FF (Hafeli, BC).

Taiwan: WYFR (via VOFC), 15055 w/rx pgm at 1336, ID as **Family Radio,** addresses in USA & India (Mayo, ME).

VOFC, 5950 at 0202 (Garcia, MD).

Togo: RTT, Lome, 5047 in FF at 0535 (Gilbert).

Tunisia: RTT, Tunisienne, 12005 in FF w/AA mx at 2110 (Messinger, NY).

Turkey: V. of Turkey, 9445 at 0331 (Ross, WA); 9687 at 2250 anncing 9445//9685//9825 (Hall, GA); 15220 (ex-15120) at 0432 w/Turkish mx (Johnson, AZ); 17760 in Turkish 2340-0000 (Atkins, WA); At 2219 (Benoit, MA).

Ukranian SSR: R. Kiev (via R. Moscow), 7165 at 0225 (Minard, NE); 9640 at 2330 (Benoit, MA).

United Arab Emirates: UAE R-TV, Dubai, 15320 at 0500 in AA (Messinger, NY); At 1938 (Shute, FL); 17775 in AA at 0428 s/on; 17830 AA at 0428; 17865 at 1631; 17890 AA at 0332; 21700 AA at 0425 (Johnson, AZ).

Unidentifieds: 15120 un un-ID lang 1405-1440, sounded like Bangladesh or India (Atkins, WA); 5898 w/BBc nx at 0455 (Emerson, CO); 17895 at 0336 w/AA mx, pips, anthem, & jammers arrived; 15205 at 0350 in AA, poss mention of Qatar; 11860 at 0259 w/IS & mention of **Emisora...** (in SS); 15430 at 0358 w/anthem, IS into AA; 21565 at 0453 in FF w/RR mx; 15400 at 0319 w/AA mx, 0330 pips & possible ID (Johnson, AZ).

USA: R. Marti (via VOA), 11930 in SS at 1459 (Benoit, MA).

V. of the OAS, 15160 at 0006-0028 w/EZ listening standards (Mayo, ME).

WHRI, 5995 at 1225, 11790 at 1130 (Northrup).

KVOH, 17775 at 2001 w/nx, **Wonderful Words of Life** pgm (Johnson, AZ).

KUSW, 11665 at 0250 (Minard, ME)' 15225 at 1934 w/DJ reading letters.

WCSN: Be sure to listen for the POP'COMM commercials airing over WCSN-- Ed.

USSR: R. Moscow World Svc., 11750 w/RR rx mx re 1M years of Christianity in USSR, 0259 close; 17600 at 0426 (Johnson, AZ); 15475 at 2220 (Hall).

R. Peace/Progress, 12040 in SS w/nx at 0100 (Garcia, MD).

R. Tikhy Okean (R. Pacific Ocean), 11815 0746-0748, ID & into RR (Johnson, AZ).

Vatican: Vatican R., 7250 at 0345 in II w/IS, ID, & s/on (Atkins, WA); 9615 at 2202 (Ross, WA); 15190 at 0446 in possible FF, 0500 into EE (Johnson, AZ).

Venezuela: R. Nacional, 5031 w/SS 0309, apparent nx. Listed as alt to 5020 (Mierzwinski).

Ecos del Torbes, 4980 at 0230 in SS (Gilbert); at 0052 (Benoit, MA).

La V. de Carabobo, 4780 at 0906 in SS (Gilbert).

R. Rumbos, 9660 in SS at 0146 (Gilbert, CA).

R. Tachira:, 4830 at 0200 in SS w/ID (Mierzwinski, PA).

R. Capital, 4850 in SS at 0932 (Garcia, MD).

YVTO time sta, 6100 at 2143 (Goodlet, Cayman Islands).

Vietnam: V. of Vietnam, 9840 at 1900, weak (Hafeli, BC); 10010 at 1410 w/mx (Gilbert, CA); 15010 at 1400 in JJ (Atkins, WA); At 1346 (Mayo, ME); At 1615 (Ross, WA); At 1143 (Messinger, NY); At 2030 in EE, 2100 in FF (Garcia, MD).

West Germany: V. of Germany, 6120 at 0506 w/address for comments (Cafferky, MA); 11860 at 0150 (Minard, ME); 11795 in GG at 0757; 17780 at 0901 in Asian svc; 17875 at 1753 in GG (Johnson)

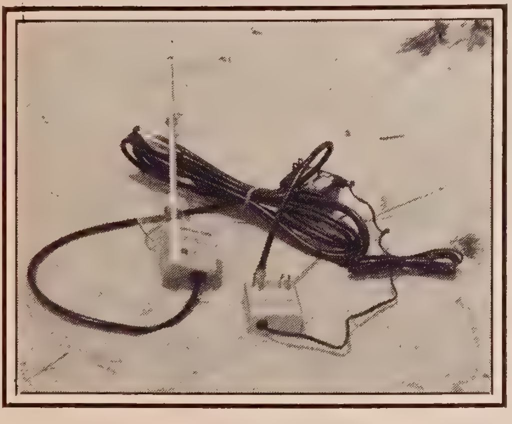
PRODUCTS

REVIEW OF NEW AND INTERESTING PRODUCTS

Wideband Active Antenna Mounts To Glass

Electron Processing, Inc. announced another addition to their line of SWL and Scanner antennas. The "SUPER VAK-TENNA" provides short-wave listeners and scanner owners an antenna that combines superior performance, easy mounting and compact size in one unit. This receive-only antenna covers from 500 kHz to 800 MHz continuously and includes an internal active amplifier providing a minimum 14 db signal boost.

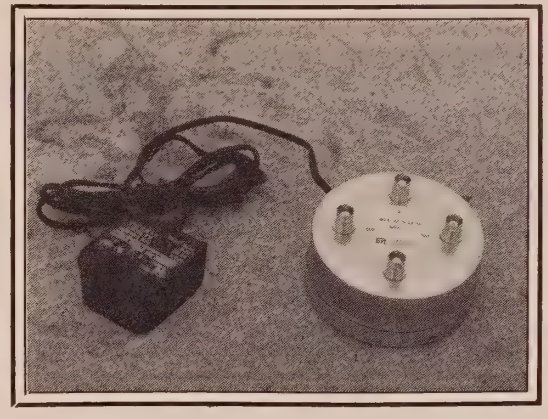
The SUPER VAK-TENNA mounts to glass by means of two powerful suction cups making this antenna ideal for the SW living in an apartment or traveling. A full 15 feet of coax cable is provided between the antenna and the power unit to aid in installation. The antenna is powered by 110 VAC and provides a female BNC jack for connection to your receiver.



Pricing starts at $149.95 amateur net with quantity discounts available. Accessories include a 50′ extension cable ($20) and adapters allowing the unit to stand up to 2″ off the window ($3). To order or for additional information contact the Sales Department, Electron Processing, Inc. at P.O. Box 708, Medford, NY 11763, or circle 102 on our Readers' Service card.

Antenna Splitter For Shortwave Listeners

Electron Processing, Inc. announced another addition to their line of SWL and Scanner accessories. The MRA-3 Multiple Receiver Adapter provides both short-wave listeners and scanner owners a means of connecting more than one receiver to an antenna. By means of popular female BNC jacks, the MRA-3 will connect up to three receivers to one antenna, eliminating duplicate antennas previously required in multiple receiver installations. Sporting an internal amplification stage, the MRA-3 assures equal or better signal strengths than with the antenna connected to only one receiver. Coverage from 500 kHz-800 MHz encompasses most frequencies normally monitored. The MRA-3 is powered by 115VAC at less than 5 watts. 12 volt DC models are also available on special order.



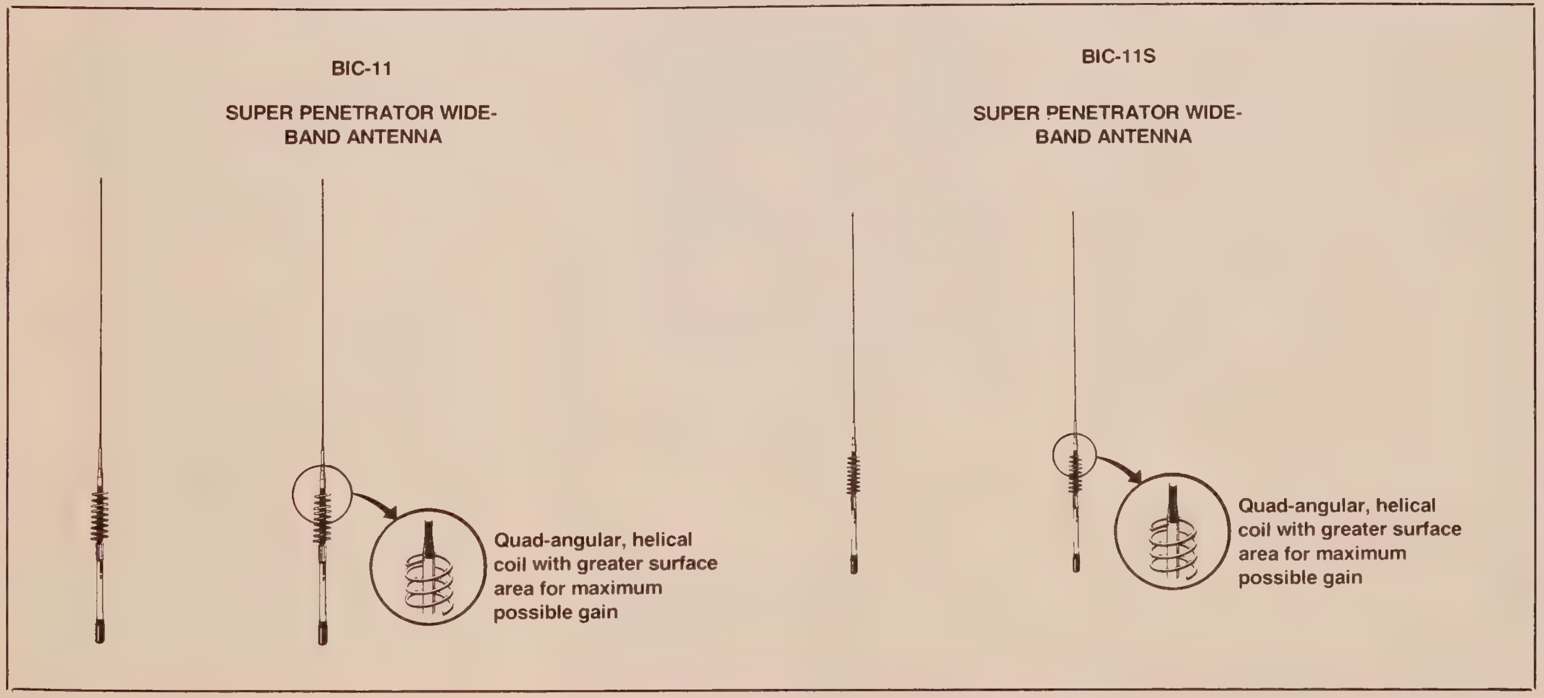
Pricing starts at $69.95 amateur net with quantity discounts available. To order or for additional information, contact the Sales Department, Electron Processing, Inc., P.O. Box 708, Medford, NY 11763, or circle 10 on our Readers' Service card.

Super Wideband Mobile Antennas

The Palomar products division of RF Limited announces two new super wideband mobile antennas, the BIC-11 and BIC-11S Super Penetrators. Designed for either the CB or amateur radio operator, these antennas receive more frequencies with the widest operating range of any current mobile antenna in the world. Both antennas transmit and receive on 1300 channels, more than double the capability of other mobile antennas, and have an input power handling ability of 3500 Watts PEP.

Super Penetrator Antennas feature a quad-angular, helical coil which provides greater surface area for maximum possible gain. They are also constructed of stainless steel with fiberglass coil insulation to endure the harshest weather conditions.

Two sizes are available: the BIC-11 Super Penetrator Antenna is 70″ (1.8 meters) and the BIC-11S is 56″ (1.44 meters). A standard 3/8″ × 24″ stud-type mounting is included. Suggested retail for both the BIC-11 and the BIC-11S is $79.95. For more information, contact: RF Limited, P.O. Box 1124, Issaquah, WA 98027, or circle 103 on our Readers Service card.


BIC-11
SUPER PENETRATOR WIDE-BAND ANTENNA
Quad-angular, helical coil with greater surface area for maximum possible gain
BIC-11S
SUPER PENETRATOR WIDE-BAND ANTENNA
Quad-angular, helical coil with greater surface area for maximum possible gain

THE HAM COLUMN

DAVE NEWKIRK, AK7M
AMERICAN RADIO RELAY LEAGUE HQ

GETTING STARTED AS A RADIO AMATEUR

The Ham-SWL Connection

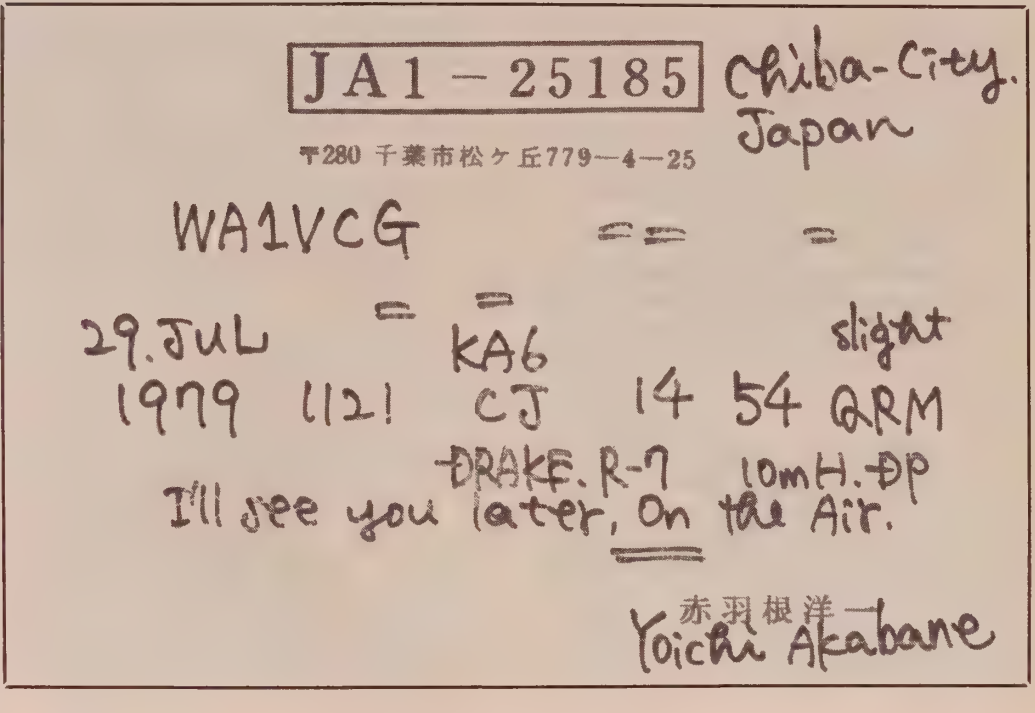
So many hams are discovering or rediscovering shortwave listening nowadays that it almost looks like hams are *finally* waking up and smelling the SWL coffee—that is, until you find out that there's *always* been fellowship between SWLs and hams. In fact, Amateur Radio has had strong ties with shortwave listening throughout most of ham history!

It is More Blessed to Receive Than Transmit

I've actually known hams who turn on their rigs and start calling CQ without taking so much as a couple of minutes to check the band for activity and propagation quality. (*You* know someone like that too? I thought so!) Such hams are unusual, though, because most radio amateurs do a lot of listening even if they never set foot outside the ham bands. A long-standing ham saying explains it this way: "You can't work 'em if you can't hear 'em." Crack just about any book about ham-band DX'ing and you'll find yourself reminded over and over again to "listen, listen and then listen some more." (Of course, the magic of ham radio is that you can *talk back* to the stations you hear. Thus, you'll usually find such "listen, listen, listen" advice tempered by remarks like this one from Ed Tilton, W1HDQ: "No one ever worked DX with a receiver!") So, most hams *do* spend a lot of time listening—it comes with the territory. But did they wait until they became hams to pick up those listening skills?

Shortwave Listening: Springboard to Ham Radio

Nope, many hams were SWL's first and hams second! Shortwave listening serves as a springboard into Amateur Radio for *one out of every three or four hams!* Proof: In 1980, ARRL surveyed 8,895 US and Canadian hams on 36 topics. One question invited participating hams to list important influences in their decision to become radio amateurs. Overall, 39% of respondents said that shortwave listening had played a major part in their getting into ham radio! (For the record, shortwave listening was an important influence to 28% of newcomers, 47% of Canadians and 14% of women who responded.) So, it's no wonder that general-coverage transceivers are popular with radio amateurs; Many hams started out in radio as SWL's—including me, folks!



JA1 – 25185 Chiba-City. Japan

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WA1VCG

29.JUL 1979 1121 KA6 CJ 14 54 slight QRM

~~DRAKE~~. R-7 10mH. ~~D~~P

I'll see you later, On the Air.

赤羽根洋一
Yoichi Akabane

Fig 1 - An SWL QSL from apprentice ham Yoichi Akabane of Chiba, Japan. Such "official SWL's" need your QSL to qualify for their ham licenses!

For some SWL's-turned-hams, signing up for radio's transmitting side is a natural result of hearing a lot of interesting stuff and wanting to get in on the action. For others, receive-only radio is a more-or-less-official apprenticeship for later two-way radio pursuits. (A successful stint as a registered SWL—including QSL's from stations heard—is a *necessary* prerequisite for a ham license in several countries. To get QSL's, such SWL's *send* QSL's; Fig 1 shows one from a Japanese ham.)

Code Practice

Especially in ham radio's earlier days, quite a few hams got hooked on SWL'ing after building their own simple receivers and tuning around for code practice from commercial and military stations. Who *wouldn't* be attracted to shortwave listening after reading this passage from "Getting Started" in the 1929 edition of ARRL's *The Radio Amateur's Handbook?*

> *To understand and enjoy radio in the fullest sense we ought to listen to all that takes place . . . . Long waves, set up by frequencies below the broadcast band, bring us a horde of flute-like signals. Press messages, storm warnings and weather reports from all over the world tell their story to whomever will listen. Some stations speak slowly and leisurely so that even the beginner can read. Others races along furiously so that whole sentences are meaningless buzzes. Countless ship stations work near the broadcast band. Ships report their position daily. Hundreds of human-interest messages are sent to and from the shore stations every day . . . . Numberless amateur two-way conversations, also transocean commercial radiotelegraph messages, short-wave broadcasting of voice and music, transmissions from government and experimental stations, and signals from expeditions exploring the far parts of the earth are among the attractions that lie here . . . . A short-wave receiver brings endless possibilities to light.*

Even though this passage seems to have been aimed at turning broadcast listeners (BCL's) into hams, it probably sold as many hams on shortwave listening as it sold BCL's on ham radio! The "learn by listening" code-

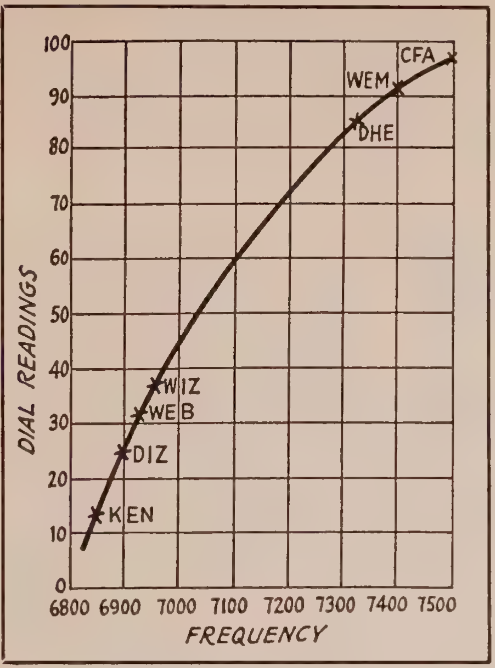

Fig 2- Where would you spot your transmitter frequency if your receiver's tuning dial was calibrated only with divisions from 0 to 100? Answer: Smack-dab between the known frequencies of commercial stations above and below the ham band! Using a graph like this one (from a 1933 ARRL Handbook*), I'd say that a spot between 60 and 70 on my dial would keep me out of hot water with the Federal Radio Commission—fingers crossed.*

practice pitch that followed this shortwave-listening rhapsody concentrated on commercial longwave code-practice sources: Longwave was the mainstay of maritime radio communication back then.

Where Am I?

Especially in the 1920's and nearly 1930's, shortwave listening found its way into nearly every ham's bag of tricks for a very practical reason: Frequency calibration of ham receivers and transmitters was hit or miss at best, so hams used commercial and governmental stations as frequency markers (see Fig 2). Under such conditions, ham interest in shortwave listening wasn't a luxury, it was a necessity!

Why Hams Stay SWL's

Nowadays, frequency calibration in most ham receivers, transmitters and transceivers isn't much of a problem; if necessary, a quick WWV or CHU check can confirm the accuracy of a digital display in no time. And code practice is easier to get than ever before: Computers, cassettes and ARRL's code practice from station W1AW keep hams and ham-license students well supplied with solid, machine-sent code. So, what keeps hams interested in SWL'ing? Shortwave broadcasting, for one thing—and the fact that shortwave listening, like ham radio, is *fun*.

What are Those Snoopy Neighbors of Ours Up To Now?

General "listening in" is attractive to hams for another reason: It helps hams keep up on what their neighboring radio services are doing. Through shortwave listening, hams can discover professional telecommunications practices and technologies worth putting into amateur practice. Radio technology transfer works the other way, too: Sometimes, radio amateurs do the inventing or discovering, and "the commercials" import the results! So, keeping a steady ear on doings *outside* the Amateur Radio bands is an important part of staying current *in* ham radio.

The ANARC Ham Net

How about an *on-the-air* link between ham radio and shortwave listening? Coming right up! Tune in the Association of North American Radio Clubs Ham Net, Sundays at 10 AM Eastern Time on 7240 kHz (lower sideband). Bob Brown, KW3F, Lansdale, Pennsylvania, serves as net control. You *don't* have to be a ham to participate: SWL's can get involved by phoning their DX tips and listening news to "gateway" station(s) announced on the net. If you're a bit too far west of the Mississippi to copy the ANARC net at 7 MHz, stand by: Tentative plans are afoot to get a *14-MHz* ANARC net in gear by the time you read this. The Ham Column will carry the details as soon as they're announced.

A Source of Splendid Pleasure

Listening is so important a part of ham radio that the "Receiver Construction" chapter of late 1920's and early 1930's ARRL *Handbooks* concluded on a poetic note that's just right for ending a listening-oriented Ham Column—after I remind you that the Ham Column seeks your comments, shack photos, questions and topic suggestions. Write to me at ARRL, Dept. N, 225 Main St, Newington, CT 06111.

> *And now, when the receiver has been built, adjusted, and placed in satisfactory working condition, it will be permissible to sit back and take a long breath. For the receiver is one of the essential parts of an amateur station. If it has been correctly built and if the location of the station is satisfactory, it will receive as far as any transmitter can send. if it has open tuning scales; if it has lots of sensitivity and amplification; and if it is smooth and quiet in operation, it will be a very great comfort and a source of splendid pleasure.*

PC

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SCANNER SCENE

BY CHUCK GYSI, N2DUP

MONITORING THE 30 TO 900 MHz "ACTION" BANDS

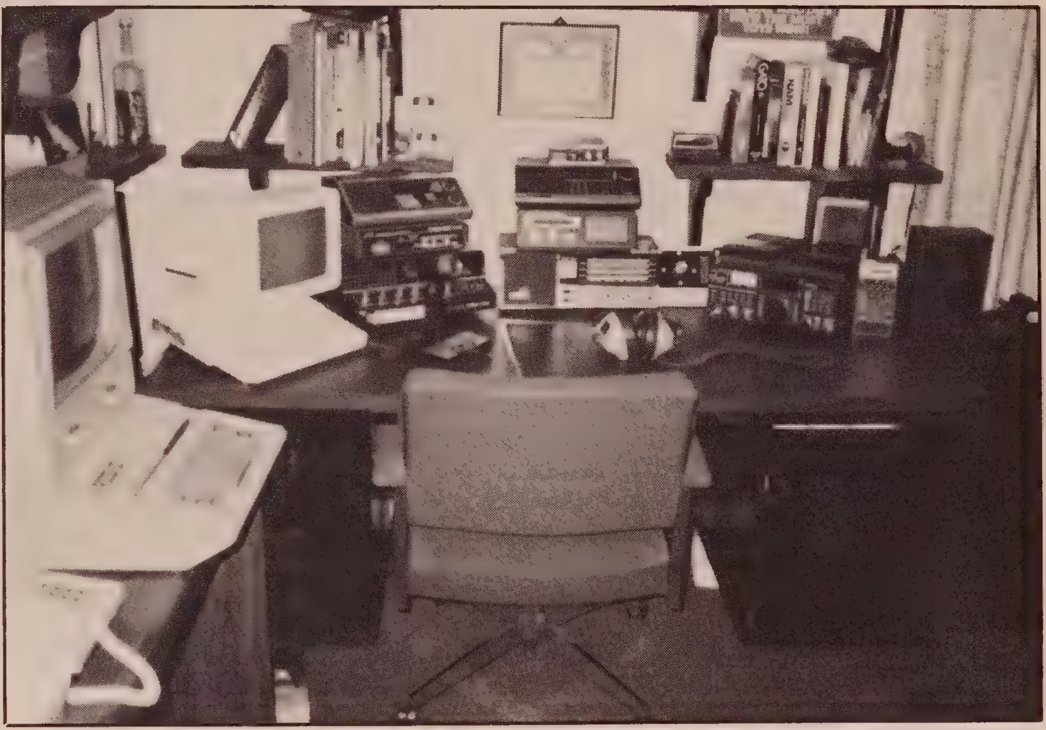
It's time to clean up the shack and sort through the stack of reader mail that has piled up for a few months. Without any further ado, here goes another month of Scanner Scene, turned over to you, the reader.

Gus Stretz of Peekskill, NY, wants to know additional frequencies used by police in the town of Cortlandt, NY. According to the third addition of the Scanner Master New York Metro/Northern New Jersey Guide (available through CRB Research Books Inc., P.O. Box 56, Commack, NY 11725) the town of Cortlandt uses 154.785 for dispatch (cars are numbered 410 to 420) and 155.370 for statewide intersystem. An additional frequency of 39.42 MHz is indicated, however, that may be an old frequency that is no longer in use. Also, check 155.310, as that frequency is used as the county hotline channel in Westchester County, NY. I hope that helps you out.

Bernie Wimmers Jr. of Vienna, VA passes along some conventional 800 MHz frequencies used in Fairfax County, VA. County police use the following frequencies: 854.1375 (District 1), 854.2875 (District 2), 853.3375 (District 3), 853.4875 (District 4), 853.9625 (District 5), 853.1875 (District 6), 853.7875 (District 7) and 853.6375 (District 8). County government uses the following frequencies (these are not trunked according to Bernie): 856.2625, 857.2625, 858.2625, 859.2625 and 860.2625. In addition, county school buses use 855.9625 (Channel 1) and 855.9875 (Channel 2). The county's old UHF police frequencies are now allocated as follows: 460.175 and 460.300 (mobile data terminals for police and fire), 460.225 (county dog catchers) and 460.125 (not in use at present).

Jim Nieznanski of West Allis, WI, sends along a tip for Radio Shack Realistic Pro-2004 owners. He said he was experiencing poor sensitivity when using using an outside antenna on his 2004. He connected an FM trap (Radio Shack stock no. 15-177) and found that at prevents front-end desensitization and greatly improves reception, especially on VHF aircraft and VHF high band. He also connected a variable attenuator (Radio Shack 15-578) along with the FM trap to enhance reception. If your having trouble with your 2004, it might be worth a try. Thanks, Jim.

Roger Wiggins of Westchester, IL, is a sergeant with the Brookfield Zoo Police Department in Brookfield, IL. He says his department uses 155.115, while zookeepers and other related operations such as visitor services, crafts and warehouse use 154.600. Roger said his police force works closely with the villages of Brookfield and Riverside and has the capability of communicating with them on either their dispatch channel of 155.070, or the ISPERN channel of 155.475. The zoo police also operate an in-park ambulance, plus they can call area hospitals on the MERCI channel of 155.340. You can see Roger's listening post in the column this month.



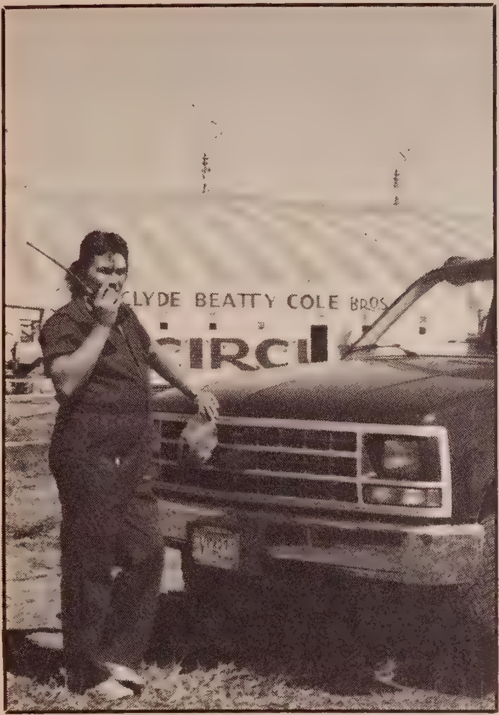
Here's the neat-looking listening post of Roger Wiggins of Westchester, IL. His receivers include the following: Bearcat 210XL, Realistic Pro-2021 and Pro-12, ICOM IC-R71A, a Hallicrafters shortwave receiver, a Sony Air-8, as well as a CB and computer equipment.

The question Roger poses; he installed the FM board in his ICOM IC-R71A HF receiver, but says he has not heard any FM activity on the HF bands. He wonders if there is anything to be heard on FM on HF. About the only FM users on HF are hams, who operate a few widely scattered FM repeaters around the country between 29.52 and 29.68 MHz. You might also find some simplex communications in this band. Broadcasters might also use FM for relay stations that may operate on 25.87 to 26.47 MHz. However, these frequencies are used far and few between. That's about all you might find on FM on HF! Hope we've been of some help.

William Renaud of Southbridge, Mass, took our advice in recent column in trying to receive UHF television signals on his scanner. He tuned across the band and heard the audio signal of WHCT-TV Channel 18 in Hartford, CT, on 499.7375 MHz. He wrote to the station requesting a QSL or verification letter. The station's chief engineer wrote back a letter with some information on the station and a verification of his catch as well. Good work, William!

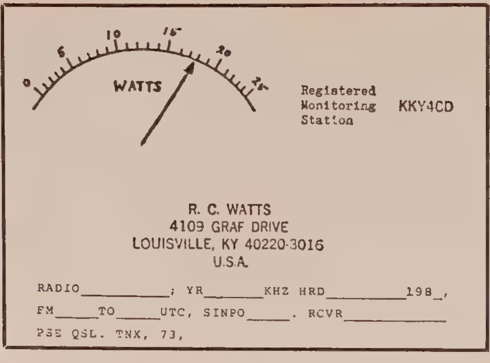
Jeffrey A Kettell of Braintree, Mass, asks where he could purchase a voice descrambler? The typical descramblers that used to be marketed were functional in tuning in inverted voice scrambling that some law enforcement agencies use. However, it is not effective (nor is any known device) in unscrambling Digital Voice Protection-coded signals. Unfortunately, Jeffrey, the Electronic Communications Privacy Act effectively banned the sale of descramblers, as they were known. Only authorized law enforcement agencies may have them in their possession under the new law, the same law that that banned listening to cellular and mobile telephone calls. I'm sure there is a black market on the outside for descramblers, but they just are not legit these days nor would you wish to be caught with one!)

G. Hawkyard of Trenton, NJ, says he is able to copy the New York City Fire Department on its "Citywide" frequency of 154.430 in his area, and was wondering about other frequencies used by the FDNY. Here's a quick look at the frequencies used by the FDNY: Channel 1, 154.430, "Citywide"; Channel 2, 154.400, Queens;



The camera caught this circus employee talking on a handheld in the shadow of the Big Top at the Clyde Beatty Cole Brothers Circus. (Photo by Tom Kneitel.)

Channel 3, 154.370, Brooklyn; Channel 4, 154.250, Manhattan; and Channel 5, 154.190, The Bronx and Staten Island. All of these frequencies are repeater outputs and can be heard an many areas of New York, Connecticut, New Jersey and Pennsylvania, especially on hot summer nights.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FM_____TO_____UTC, SINPO_____. RCVR____________
PSE QSL. TNX, 73,

Monitor KKY4CD sends out this card. It's gold in color.

For those who are interested, portable radios for the FDNY have a different plan, and are as follows: Channel 1, 154.830, primary fireground; Channel 2, 154.430, command; Channel 3, 153.770, Queens; Channel 4, 154.010, Manhattan; Channel 5, 153.950, Brooklyn; Channel 6, 154.070, The Bronx and Staten Island; and Channel 7, 153.890, secondary fireground. Channel 7 is installed in only newer portable radios. Do not expect to hear anything on these portable channels, unless the fire is in your neighborhood. The FDNY also uses UHF for some communications. Channel 1 is 460.575 and is used by the Division of Fire Investigation and as the fire marshals' primary channel. Channel 2 is on 460.625 and is also used by the Division of Fire Investigation, as well as the fire marshals' backup. It is also cross-linked to 154.430 ("Citywide") for high-rise firefighting. This allows chiefs inside a high-rise building to keep in touch with firefighting operations. Lastly, the FDNY has been issued licenses on 800 MHz for future use on 856.2125, 857.2125, 858.2125, 859.2125, 860.2125; 856.4625, 857.4625, 858.4625, 859.4625, 860.4625; 856.7125, 857.7125, 858.7125, 859.7125, 860.7125; 856.9625, 857.9625, 858.9625, 859.9625 and 860.9625.

However, it seems unlikely that the FDNY will use the .4625, .7125 and .9625 groups of frequencies, because they are already in use by New Jersey State Police, which operates a transmitter atop the World Trade Center in Manhattan. Some other FDNY frequencies to listen to are: 156.650, Marine Channel 16, which is used by fireboats; and 160.335, which is used by fire or rescue operations at Grand Central Station to coordinate with Metro North Commuter Railroad units. A system of satellite receivers throughout the lower levels of the station, facilitate reliable communications. Fire chiefs and officers are issued the railroad portables when they arrive on the scene.

If you have a question, comment, photograph of your shack, frequency list or concern, we'd like to hear from you. **PC**

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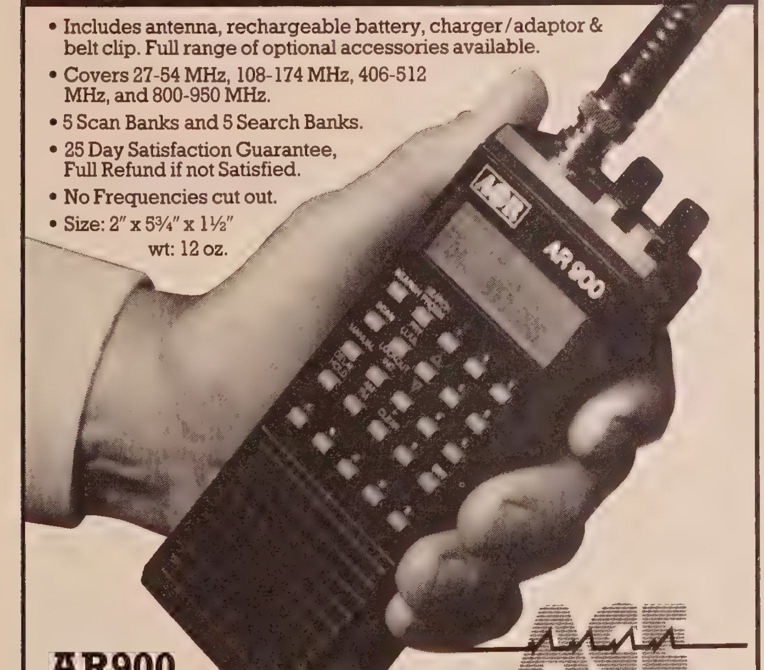

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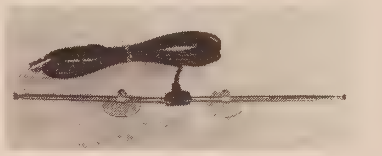

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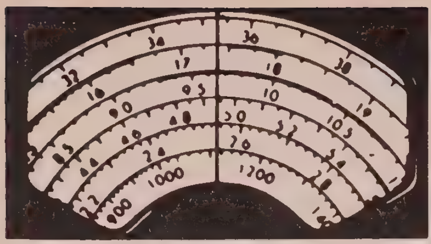


COMMUNICATIONS CONFIDENTIAL

BY DON SCHIMMEL

YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

A big thanks to all those readers who wrote expressing their interest in the May/June POP'COMM series "Secrets of Shortwave Espionage." Your comments and loggings were appreciated and perhaps at some time in the future an update can be prepared outlining additional frequencies and schedules.

First-time contributor Russell Wright, TX writes "I have been a *POP'COMM* reader since Volume 1, Number 1 but only recently purchased a shortwave receiver, a Realistic DX-440 which I am using with a long-wire antenna."

During a two-hour period on a recent holiday, Andy Gordon, CT logged 1 NOAA, 36 Navy and 2 CG MARS Stations on 14441.5 kHz. Andy also advised that in the past 18 months his coverage of 2716 and 4066.1 kHz has resulted in logging US Navy ships 771 times.

Vincent Fiscus, MT says he monitors the HF bands using a Kenwood TS-440S and a Panasonic RF-2200 and may be reporting some items in the future.

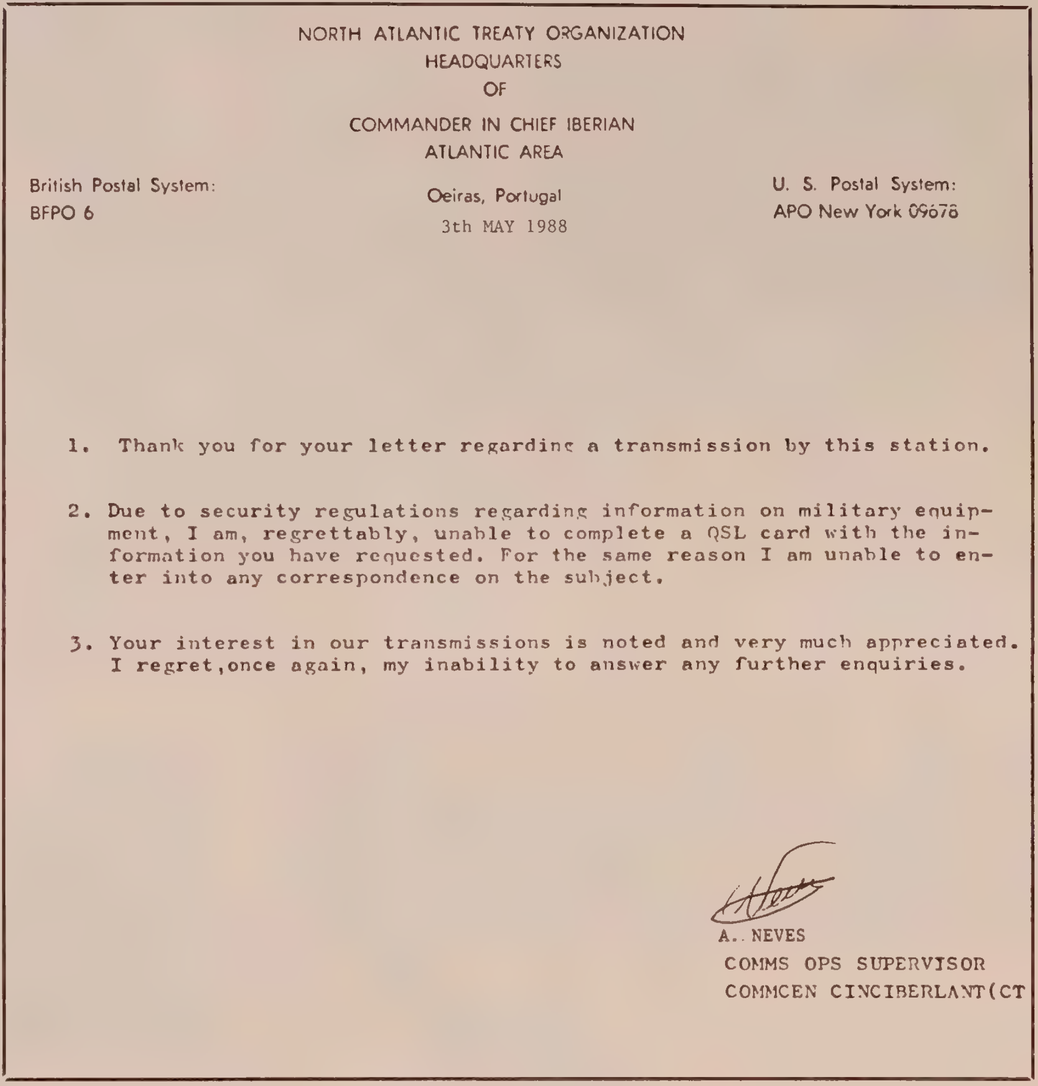
From Peter Thompson, England we learn that "ASCOT" (RAF) flights are usually numbered as follows:

ASCOT 2XXX	VC10 Aircraft
ASCOT 3XXX	L1011 Aircraft
ASCOT 4XXX	C130 Aircraft
ASCOT 5XXX	C130 Aircraft

Peter also forwarded some additional RAF information.

RAF STRIKE COMMAND - "ARCHITECT"

24 hr - 2591, 4540, 4742, 5729, 8190,



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OF
COMMANDER IN CHIEF IBERIAN
ATLANTIC AREA

British Postal System:
BFPO 6

Oeiras, Portugal
3th MAY 1988

U. S. Postal System:
APO New York 09678

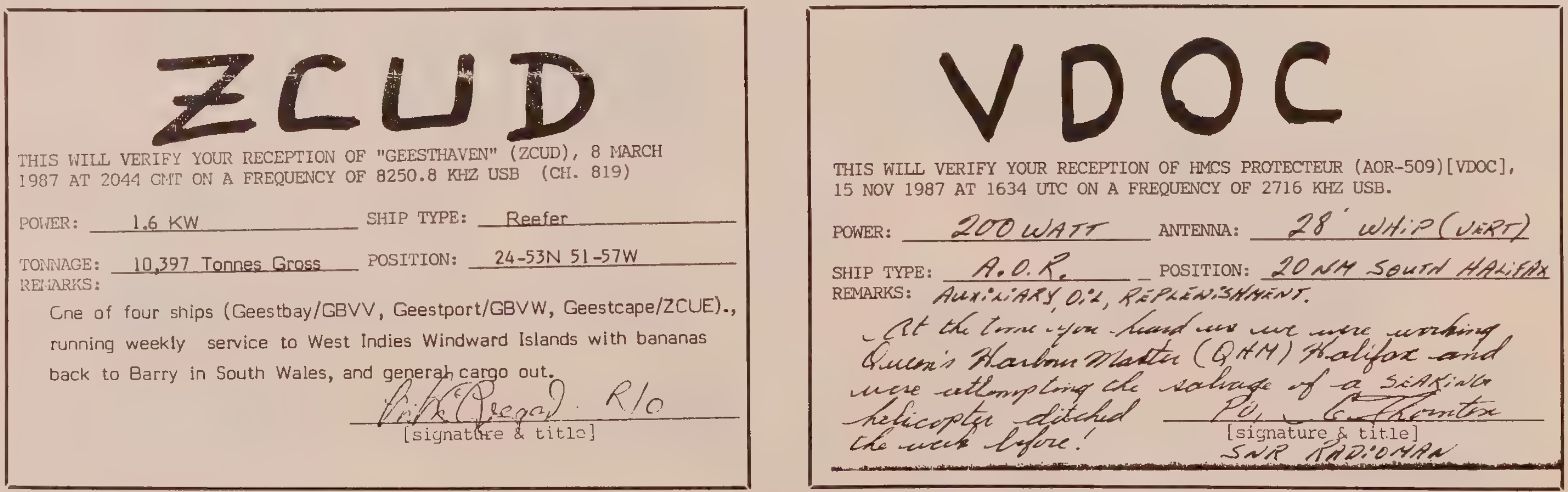
1. Thank you for your letter regarding a transmission by this station.

2. Due to security regulations regarding information on military equipment, I am, regrettably, unable to complete a QSL card with the information you have requested. For the same reason I am unable to enter into any correspondence on the subject.

3. Your interest in our transmissions is noted and very much appreciated. I regret, once again, my inability to answer any further enquiries.

A. NEVES
COMMS OPS SUPERVISOR
COMMCEN CINCIBERLANT(CT

Here is the letter received by Hugh Hawkins, TX in lieu of a QSL card from a NATO Area Headquarters.



ZCUD

THIS WILL VERIFY YOUR RECEPTION OF "GEESTHAVEN" (ZCUD), 8 MARCH 1987 AT 2044 GMT ON A FREQUENCY OF 8250.8 KHZ USB (CH. 819)

POWER: 1.6 KW SHIP TYPE: Reefer

TONNAGE: 10,397 Tonnes Gross POSITION: 24-53N 51-57W

REMARKS:

One of four ships (Geestbay/GBVV, Geestport/GBVW, Geestcape/ZCUE)., running weekly service to West Indies Windward Islands with bananas back to Barry in South Wales, and general cargo out.

R/O
[signature & title]

VDOC

THIS WILL VERIFY YOUR RECEPTION OF HMCS PROTECTEUR (AOR-509)[VDOC], 15 NOV 1987 AT 1634 UTC ON A FREQUENCY OF 2716 KHZ USB.

POWER: 200 WATT ANTENNA: 28' WHIP (VERT)

SHIP TYPE: A.O.R. POSITION: 20 NM SOUTH HALIFAX

REMARKS: AUXILIARY, OIL, REPLENISHMENT.

At the time you heard us we were working Queen's Harbour Master (QHM) Halifax and were attempting the salvage of a SEAKING helicopter ditched the week before!

[signature & title]
SNR RADIOMAN

Here are two PFC's sent to us by Patrick O'Connor, NH.

Kurt Mueller, Switzerland sent in this photo of his equipment layout. Kurt has been following the SWL hobby for 32 years and uses (from L-R) Sony CRF-1, ICF-2001D (2010), ICF-7600D (2002), ICF-4900 and AIR-8. All well guarded by Honey, the Mastino Napoletano dog.

6738, 9032, 11204, 11234, 18018, 23220 kHz.
0800-1900 UTC - 13257, 15031 kHz.
CYPRUS FLIGHTWATCH
24 hr - 4730, 11234 kHz
0600-1700 UTC - 18018 kHz
1700-0600 UTC - 9032 kHz
GIBRALTAR
0800-2100 UTC - 11234 kHz
2100-0800 UTC - 4742 kHz
RAF AIRDEFENSE FREQUENCIES (used by RAF & Navy to pass radar info to Buchan, Boulmer, Benbechula etc.) 3120, 3939, 4707, 4710, 4739, 5747, 6693, 6715, 6733, 6740, 6748, 6765 kHz.

Having acquired special equipment for monitoring LF and VLF frequencies, Aren van Waarde, CT says he has had "amazing" results with a L-400B active antenna and a L-101B VLF converter (both made by LF Engineering Co., East Haven, CT). "They are hooked up to my Sony ICF 7600D (ICF 2002 in the US). Perhaps this will convince the reader who complained about the beacon loggings that true long-distance reception is possible."

Registered Monitoring Station KC0 0X sent in a news clipping describing the oil drilling jacket "Bullwinkle," which is the largest such jacket ever built. This oil platform was constructed for Shell Oil Company and is to be installed at a drilling site in the Gulf of Mexico approximately 350 miles east of Corpus Christi, TX. The query which accompanied the clipping requested information relating to frequency useage by this oil platform. I do not have any details of the specific frequencies to be used for this particular platform but I refer interested readers to a Feb 1985 POP'COMM article, "Tuning in the Shadow Empire" by J.C. Tugwell which contains a great deal of valuable data for monitoring platform communications.

An unidentified USB activity was monitored by J. M., KY and he wrote asking for information. After covering several schedules, it has been determined that this network is composed of Bell Telephone stations throughout the United States. Skeds are generally at 2000 UTC on Fridays but I have observed skeds made for 1400 on a Friday and also 1400 on a Thursday. I noted that 6803 kHz was refereed to as Channel 34 and 7552 was called Channel 45. Mention was made of a Channel 34 but a corresponding frequency was not given. This last frequency was described as a South-West Bell Channel by one of the operators.

According to a listing in one of my references, this network is assigned frequencies of 2194, 3155, 4438, 4439, 5005, 6763 & 7300 kHz.

During one sked, operator chatter revealed the Little Rock Station was working to restore a fiber optic cable.

Table 1 contains the observed callsigns, locations and Company identification where known.

Table 1

Callsign	Location	Company
WNFT417	Morristown, NJ (NCS)	Bell Communications
WNGN547	Indianapolis, IN	Indiana Bell
WNGQ469	Linlithgo, NY	New York Telephone
WNHI324	Oklahoma, City, OK	Not Available
WNHI785	Little Rock, AR	SouthWest Bell
WNHK760	Staunton, VA	Chesapeake & Potomac
WNHK761	Culpepper, VA	C & P
WNHM961	Fairmont, WV	C & P
WNHM965	Martinsburg, WV	C & P
WNHM969	Beckley, WV	C & P
WNHN755	Southfield, MI	Michigan Bell
WNHP857	Gasden, AL	South Central Bell
WNHU799	Unlocated	Not Available
WNIC425	Champaign, IL	Illinois Bell
WNID658	Jacksonville, FL	Southern Bell
WNID675	Topeka, KS	SouthWest Bell
WNIM867	Ballwin, MO	SouthWest Bell
WNIY791	Houston, TX	Not Available
WNJK493	Kansas City, MO	Not Available
KGD34	Washington, DC	Not Available

Ute Intercepts
(All Times Are UTC)

176.9: Lowfer HB, New Haven, CT (Van Waarde, CT).

248: Beacon WG, Winnipeg, Man., 0640 (J.M., KY)

270: Beacon HHP, Pt.-au-Prince, Haiti, 0630 (Van Waarde, CT).

284: Beacon PDW, Evansville, IN at 1419 (J.M.).

293: Beacon TOR, Torrington, WY, 1146 (Pearce, TX).

300: Beacon C, Mobile Point LS, AL (Williams. SC).

306: Beacon R, St. Johns LS, FL 0750 (Van Waarde, CT).

323: Beacon OUK, Calhoun, GA 1542)J.M., KY); Beacon BSD, St. Davis Head, Bermuda 0530 (Van Waarde, CT).

326: Beacon BHF, Islands Apt., Great Bahama Isl., Bahamas (Van Waarde, CT).

344: Beacon ZIY, George Town, Grand Cayman I., 0750 (Van Waarde, CT).

350: Beacon NY + long dash, Enderby, BC 1102 (Pearce, TX).

374: Beacon BOD, Bowman, ND 1229 (Pearce)

379: Beacon ACZ, Wallace, NC 0250 (O'Connor, NH).

388: Beacon NXX, Willow Grove NAS, PA 0318 (O'Connor, NH).

392: Beacon HEI, Hettinger, ND 1040 (Pearce, TX).

394: Beacon RRP, Rock Hill, SC (Williams, SC).

400: Beacon LKO, Billings, MT 1120 (Pearce, TX)

423: Beacon JNM, Monroe Co. Apt., GA 0645 (Van Waarde, CT).

515: Beacon CL, Pt. Angeles, WA (Arens, BC).

521: Beacon INE, Missoula, MT (Arens, BC); Beacon DWH, Houston, TX 0440 (Blaise, TX).

2182: EJK, Valentia, Ireland in USB at 0334 clg all ships (O'Connor, NH); NMC, CAMSPAC San Francisco, CA wkg CG-1480 & 1484, req QSY 5696 or 8984. NMG, USCG Comsta New Orleans also called CG-1480 at 0220, USB (Sabo, CA).

2670: NOE, USCG No. Bend, OR in USB at 0504 w/bc re missing buoy (O'Connor, NH).

2716: NZLL, **USS Connole (FF-1056)** to Norfolk Tug Control re injured sailor aboard at 2345; Un-ID

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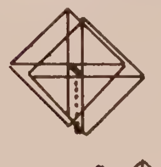
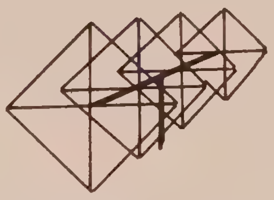


Goldenrod
45 Mobile
Antenna



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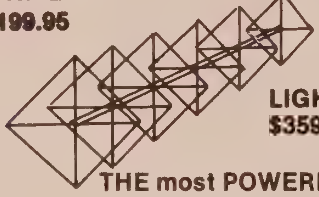

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Abbreviations Used For Intercepts

AM	Amplitude Modulation mode
BC	Broadcast
CW	Morse Code mode
EE	English
GG	German
ID	Identifier/ied/ication
LSB	Lower Sideband mode
OM	Male operator
PP	Portuguese
SS	Spanish
tfc	Traffic
USB	Upper Sideband mode
w/	with
wx	Weather report/forecast
YL	Female operator
4F	4-figure coded groups (i.e. 5739)
5F	5-figure coded groups
5L	5-letter coded groups (i.e. IGRXJ)

USN unit w/call 2UB clg Giant Killer at 0030 but neg contact, then asked for rdo check & Norfolk Tug Control answered; NCBG, **USS Portland (LSD-37)** w/rdo check to Canadian Forces sta St. Johns Military at 0030, ship asked St. Johns to call Norfolk via landline to say Portland was attempting to raise them via radio re confirmation of degaussing svcs early next day (Gordon, CT).

2717.5: NKIN, **USS California (CGN-36)** off freq clg Alameda Port Control at 0935 (Gordon, CT).

3113: Pastrami to Fireflight w/alphanumeric tfc, USB at 0503 on SAC Bravo/ABNCP chan (Sabo, CA).

3615.7: GND1, Stonehaven, England at 0650 w/CW ID & ARQ phasing sig (Van Waarde, CT).

3782: CTP, NATO Lisbon, Portugal w/CW marker at 0251 (Kneitel, NY).

3794: Long series of machine-sent CW V's at 0244, no ID (Kneitel, NY).

4010: YL/GG in AM-mode at 1800 w/185 & 76 grp msgs to send in 30 min time slot when msgs would have to be rptd according to usual sked. YL had to speed up near end and barely made it with only 25 secs left (Mason, England).

4066.1: USS Antietam (CG-54) clg San Diego CSS1 re patch; NSCR, **USS Reid (FFG-30)** to San Diego CSS1 at 0955 re patch to COMNAVSTA San Diego w/req for more ammo for further firing exercises (Gordon, CT).

4125: KGD91, Yakutat, AK in USB at 0420 w/high seas report (Hallmeyer, CA).

4198: ELFT2, cargo ship **M/V Repap Enterprise** wo VCS in CW at 0353 (McDonald, BC).

4256: KLC, Galveston, TX clg CQ in CW at 1806 (Wright, TX).

4431.9: USN tracking net w/stas AF, AW (NCS & alternate), D, M. L, K, H, & C. Exchanged bearings & ranges on targets, some of which were air targets. Much coordination re which sta was tracking what. At least 1 sta referred to "joining Alligator." Net used for 4F raid #'s. USB 0204-0230 (Sabo, CA).

4640: YL/EE sending 3/2F in USB at 0017 (Kneitel, NY).

4996: RWM, Moscow, USSR in MCW 0115-0120 w/pips (Ross, ONT).

5048: 312M, un-ID sta, in USB at 1354. A British OM wkg D902 w/cryptic sounding tfc (Thompson, England).

5062.1: CMU967, Soviet Navrad, Santiago, Cuba in CW at 0028 w/long series of hand-sent V's (Kneitel, NY).

5063.6: NRT, Yokota Monitor, Japan wkg NRT3, Iwo Jima Loran sta in USB at 0925 (Sabo, CA).

5361: BT9P, un-ID sta, in USB at 1400. British OM gives authenticator letter & receives coded tfc. Believe this freq & 5048 kHz used in conjunction w/large scale army maneuvers (Thompson, England).

5535: Speedbird 182 wkg Speedbird London on this company freq in USB at 0039, gets wx & cricket scores (Margolis, IL).

5692: CG Air Sta, Houston, TX w/rdo check to CG-5416, USB at 1751 (Wright, TX).

5696: Rescue 1494, an H-3F w/patient aboard wkg NOH & NMN, USB 0515-0520 (Sabo, CA).

5922: Beacon X in CW at 0049, but running at faster than the usual sending rate for these SLB's, went into tfc at 0100 (Kneitel, NY).

6206: A/c M7K in contact w/Echo Control, USB at 0815. Echo Control asked to relay various info to Alfa Tango. Discussion between Echo Control & M7K as to unit F4K not corresponding to Alligator net ID at 2240. Much talk re tracks (Kammler, CA).

6277.5: OM/SS clg Tres Ocho Ocho (388) on USB at 0421-0426 (Margolis, IL).

6288: D9IK, Korean bulk carrier **M/V Sammi Crystal** wkg NMC in CW at 0616 (McDonald, BC).

6428.5: VHP, Royal Australian Navy, Canberra, Australia in CW at 0745 w/VVV marker (Margolis).

6632: Some guy really singing it up, sounded drunk. After he finished, a struck up a QSO with another sta. Everything in JJ, was USB at 0440 (Scalzo, PQ).

6667: YL & OM/EE w/fishing tfc re squids, USB at 0127 (Scalzo, PQ).

6675: YL/EE w/BBC accent repeating 35702 in AM-mode 2100-2110. At 2110 "Ready, Ready 62 62, then into 5F grps (Mason, England).

6710: YL/GG w/5F grps at 1300. At 1315 2 OM/EE in USB & hrd JWC asking Maggie 2 to QSY to Oscar 10 to avoid the #'s sta (Mason, England).

6716: Halifax Military tfc in USB at 0620 w/Sierra 4 Juliet Golf (Hallmeyer, CA).

6735: Canadian Forces or NORAD exercise net here (primary), also 6750, 8967 & poss 6710 w/rdo checks & talk of setting up battle staff coordination freq. Included Tuna Fish w/patches thru Trenton Military to Granville & Tenement, & Sidecar to El Dorado. All USB, 0520-0626. Poss related net w/Muleshoe to Reprimand on 6710 at 0437 (Sabo).

6738: Architect (RAF) bc of alphanumeric msg, USB at 0601 (Hallmeyer, CA).

6748: Benbechula, British forces air defense sta, USB at 1840 advising airborne radar a/c "Friendly MKHP03." MKHP03 is a location off NW Scotland. At 1859, hrd Boulmer, a British forces sta wkg Z56 (Thompson, England).

6756: AFA4, Andrews AFB, MD to a/c 676 re making "55 lower" their secondary. This is Foxtrot 36 in the Mystic Star net (Sabo, CA).

6761: Chill 33 to Lady Fair w/crypto wx for relay to Anita & Warrior's Den, USB at 0321. SAC Quebec channel (Sabo, CA).

6801.5: Beacon D (Odessa, USSR?) in CW at 0009 (Kneitel, NY).

6804: YL/SS in AM-mode at 0107 w/073 (X3) & 1-0 count repeated (Scalzo, PQ).

6810: YL/EE repeating 288 by 53 w/mil style #'s. At 2010. At 2010. "Attention" then into 5F grps. Large pause after every 2 grps. Hrd about a year ago w/same 288 ID but not since (Mason, England).

6876: Eagle 3 telling Eagle 2 they were switching from 100 baud to 600 baud RTTY. Hrd in USB at 1815, said this was freq Alfa 1 (J.M., KY).

7025: YL/EE repeating Fiver Fiver Two Eight Zero Zero, AM-mode 1700-1705, then off (Mason, England).

7475: KIT88, FAA Martinsburg, WV telling KDM50 that they received an alert on this freq. KDM50 heard no alert, so both returned to "scan" mode. USB at 1528 (J.M., KY).

7485: NABN, **USS Seattle (AOE-3)** in USB at 1802 rescheduling xmtr tests w/NAO (J.M., KY).

7532: YL/GG repeating Charlie Tango in AM-mode 1930-1935. At 1935 anncd 884 884 38 Gruppen und 25 Gruppen, 465 465 57 Gruppen Achtung. Msgs were 5F grps. All of 884 tfc began w/1 or 0, but 465 grps began w/any number (Mason)

7535: NLVQ, **USS South Carolina (CGN-37)** testing all comms modes to Norfolk ICSB at 1302; NQOD, **USS Preserver (ARS-8)** w/same at 1903 (J.M., KY).

7823: Two parties discussing a/c & helo parts/problems, USB at 0114 (Scalzo, PQ).

8148: OVG8, Frederikshaven, Denmark in CW at 2235 w/marker (Kneitel, NY).

8263.2: VCTG, a Canadian vessel, calling Halifax CG in USB at 0020 (Kneitel, NY).

8291.1: Stas at var times in USB included WGW, Tug Communications, Inc., San Juan, PR; WLG, Miami Rich Electronics, Inc., FL; & WHW, Queen Fisheries, Seattle, WA (Margolis, IL).

8294: WFZ, Tidewater Marine Towing, Morgan City, LA w/USB tfc at 2117. A few inland marine stas starting to detune slightly from regular freq (8294.2 kHz) to escape the congestion (Margolis).

8294.2: Tugs: WYL4318 **Barbara Fox** in contact w/WYL4908, **Sandra Fox** w/position report for relay to KXP, Seattle; USB at 0515 (Sabo, CA).

8300: New Star Radio Station #4, YL/CC w/4F grps each X2. Same type of tfc at same time on 11430 kHz, but not similcast. Both in AM-mode at 1334 (Sabo, CA).

8374: CSPH, Portuguese trawler **David Melgueiro**, clg CUL8 in CW at 2214 (Margolis, IL).

8391: 3EWC, Panamanian flag ulk carrier **M/V Green Elliot** in CW wkg VAI (McDonald, BC).

8440.6: C6N, Nassau, Bahamas in CW at 2300 clg CQ at 2300.

8674.6: VWM, Madras, India w/VVV marker in CW at 1314 (Bledsoe, CA).

8819: Baku, USSR w/Volmet wx bc in USB, YL/RR at 1428 (Mueller, Switzerland).

8959: EIP, Eire w/Volmet wx bc in USB at 0137 (Scalzo, PQ).

8967: Lark 61 in USB at 0823 to Yokota w/patch to Hickam (Hallmeyer, CA).

8972: 2YW & S4JG2 in USB at 0707 w/clear & scrambled tfc (Hallmeyer, CA).

8989: Old Salt, **USS Nimitz, CVN-68)** w/patch to Beaver (USN TACSFACS, San Diego) re their a/c entering "PMTC" airspace. Mentioned UHF freqs 268.5 pri & 376.8 sec, USB at 0301 (Sabo, CA); Un-ID sta w/Skyking bc, USB at 2114. Next was USN a/c Navy Lima Delta 692 vlg McClellan, foll by MAC 60159 asking McClellan for rdo check (Kammler).

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11180: AJE, USAF Croughton, England at 0227 in contact w/Dogmatic (O'Connor, NH).

11180: AFA3, Andrews AFB, MD wkg un-ID VIP a/c w/patches. This is Foxtrot 608 in the Mystic Star net (Sabo, CA).

11200: RAF Volmet, W. Drayton, UK at 1350 (Mueller, Switzerland).

11234: RAF a/c Ascot 2361 called Architecht but no joy. Sais was QSY to 10. Monitored 18018 but nothing hrd (Thompson, England).

11243: SAC a/c Koala 35, Brick 47, & Cofic 85 to gnd sta Java Jive w/ops normal report; also Ballpark w/2 diff Skyking msgs, USB at 1930-1936. SAC Alfa channel (Sabo, CA).

11297: Kiev, USSR w/Volmet bc in USB, YL/RR at 1352 (Mueller, Switzerland).

11300: 5ST, Tananarive Aeradio, Madagascar in USB at 21187 wkg Khartoum. Also 6OM, Mogadishu Aeradio, Somalia at 2103 wkg Nairobi (O'Connor)

12357: OM/EE using callsign NUSC clg WOO. Indicated NUSC located at Long Beach, CA, USB at 2045. Can't find NUSC in USN or USCG lists, so may be a new ship. Any info? (Hall, CA).

12429: A busy day here on USB at 2320: KHY, Marina del Rey YC wkg WZX6442, yacht **Margi Mar** off Avalon; KST, Tacoma, WA wkg KCTF, **Sealand Endurance,** KTTZ, **Sealand Kodiak,** & KGJX, **Sealand Anchorage** w/daily reports. Then KRJG, **M/V President Eisenhower** wkg the sparks at KRJE, **M/V President Roosevelt** re comms skeds. At 1911, KYI593, Seattle wkg several un-ID ships re oil spill. Finally KYI593 sent RR tfc to skipoper of Soviet vessel **Vladivostok** (Hall, CA).

12625: 3EDU3, **M/V Ocean Fame** trying to send telegram thru VAI, but jammed several times & had to QSY (Hall, WA).

12703.6: PKD, Surabaja, Indonesia clg CQ in CW at 1138 (Ross, ONT).

12895: UNM2, Klaipeda R., Lithuanian SSR w/CW marker at 0255 (Kneitel, NY).

12969: XSV, Tianjin, PRC clg CQ in CW at 1149 (Ross, ONT).

13011: AQP, Karachi, Pakistan in CW. PFC QSL back in 4 weeks + personal letter from Lt. Cmdr in Pakistani Navy (Ross, ONT).

13037: KLC, Galveston, TX clg CQ in CW at 1817 (Wright, TX).

13046.5: PZN, Paramaribo, Surinam clg CQ in CW at 0005 (Wright, TX).

13059.8: 7OA, Aden, S. Yemen, in CW at 1300 w/70A (instead of correct 7OA) marker (Bledsoe, GA).

13201: MAC 50254 in USB at 2129 being called by McClellan AFB & asking for ans on any of their published freqs, but no response (Kammler, CA).

13231: CF Lahr, FRG w/wx bc, USB at 1416 (Mueller, Switzerland).

13273: Honolulu in USB at 0108 to various a/c including Navy Sierra Tango 442 (Hallmeyer, CA).

13282: Tokyo Radio w/Volmet bc, USB at 0440. YL's voice sounded synthesized (Hallmeyer, CA).

13646: Beacon P in CW at 0015 (Kneitel, NY).

13920: YL repeating Charlie India Oscar 7 Delta at 0050. At 0218 xmsn stopped in diff YL voice

times: Mike India Whiskey 2. Then

w/Charlie India Oscar 2 (Williams,

li Intelligence (Mossad)-- Ed.

0ICE, USN MARS sta McMurdo

a in USB at 2358 wkg NNN0ABQ

13977.3: Moscow PTT in USB at 1102. YL/EE w/voice mirror test (Thompson, England).

14441.5: NNN0CBQ, USN MARS abd **USS Simpson (FFG-56),** NNN0CYM abd **USS Jack Williams (FFG-24)** clg any stateside MARS sta at 2230. At 2025 monitored NNN0CMI USN MARS abd **USS Robert G. Bradley, FFG-49)** being used from one of that ship's 2 SH-2 helos. ID's as "Airborne Unit" & attempts to raise any stateside MARS sta. Got replies from NNN0TSD (CA) & NNN0QGR (RI) (Gordon, CT).

14462: RIP, un-ID CW sta at 1245 w/hand sent VVV & asking QSY 19305 kHz. At 1252 on 14462 kHz went into 487/50R RTTY w/5F tfc (Kneitel)

14477: NNN0CAC, **USS Mobile Bay (CG-53)** at 2300 w/patches from Gitmo via NNN0NIG (Gordon)

16090: AFA3, Andrews AFB, MD w/patch to McChord for a/c 200 (SAM 200?), USB at 1644 (J.M., KY).

26481.7: UDUC, Soviet **Svera Lebedeva** in USB at 0924 wkg SAG w/patch to USSR. Unusual since could have easily contacted numerous USSR coastal stas (Thompson, England).

16760: 9VHF, ship **Ocean Traveller** in CW at 1814 wkg DAN (O'Connor, NH).

16768: 3FBY2, Japanese vessel **Crystal Queen** wkg JPO2 w/telegrams (Hall, WA). Time?-- Ed.

16818: DUMM, Philippine bulk carrier **M/V Southern Wealth** to NMC in CW at 2343 (McDonald).

16883: JOU, Nagasaki, Japan clg CQ in CW at 0704 (Hallmeyer, CA).

16912.3: SUH, Alexandria, Egypt clg CQ in CW at 1401 (Bledsoe, CA).

17141: UFN, Novorossiysk, USSR at 1830 in CW clg 4KN (Kneitel, NY).

17385: CLP1, MFA Havana, Cuba w/CW msg at 1442 after RTTY ops (J.M., KY).

17413.5: KKN39, supposedly Dept. of State, supposedly Washington, DC, w/CW marker at 1318. Many still claim it's CIA, and now transmitting from a site in Florida (Kneitel, NY).

17940: A/c KLM-688 to KLM Airlines Base, Amsterdam, Holland re write up, USB 2120-2129 (Sabo, CA).

20147.5: 7RQ20, Algeria in CW at 1051 w/cable in FF congratulating diplomats on their "vitality" (Thompson, England).

20972: Canadian operation similar to MARS from Valcartier Mil Base, PQ w/patches, etc. for CF overseas. Calls noted indlude: CIW608, VEXV9, VET9. USB at 1600 (Scalzo, PQ). **PC**

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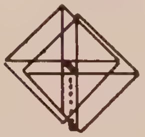

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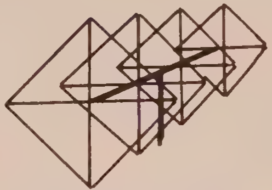

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Abbreviations Used For Intercepts

AM	Amplitude Modulation mode
BC	Broadcast
CW	Morse Code mode
EE	English
GG	German
ID	Identifier/ied/ication
LSB	Lower Sideband mode
OM	Male operator
PP	Portuguese
SS	Spanish
tfc	Traffic
USB	Upper Sideband mode
w/	with
wx	Weather report/forecast
YL	Female operator
4F	4-figure coded groups (i.e. 5739)
5F	5-figure coded groups
5L	5-letter coded groups (i.e. IGRXJ)

USN unit w/call 2UB clg Giant Killer at 0030 but neg contact, then asked for rdo check & Norfolk Tug Control answered; NCBG, **USS Portland (LSD-37)** w/rdo check to Canadian Forces sta St. Johns Military at 0030, ship asked St. Johns to call Norfolk via landline to say Portland was attempting to raise them via radio re confirmation of degaussing svcs early next day (Gordon, CT).

2717.5: NKIN, **USS California (CGN-36)** off freq clg Alameda Port Control at 0935 (Gordon, CT).

3113: Pastrami to Fireflight w/alphanumeric tfc, USB at 0503 on SAC Bravo/ABNCP chan (Sabo, CA).

3615.7: GND1, Stonehaven, England at 0650 w/CW ID & ARQ phasing sig (Van Waarde, CT).

3782: CTP, NATO Lisbon, Portugal w/CW marker at 0251 (Kneitel, NY).

3794: Long series of machine-sen
0244, no ID (Kneitel, NY).

4010: YL/GG in AM-mode at 180
grp msgs to send in 30 min time slo
would have to be rptd according to us
had to speed up near end and barely
only 25 secs left (Mason, England).

4066.1: **USS Antietam (CG-54)** cl
CSS1 re patch; NSCR, **USS Reid (FF**
Diego CSS1 at 0955 re patch to CO
Diego w/req for more ammo for
exercises (Gordon, CT).

4125: KGD91, Yakutat, AK in
w/high seas report (Hallmeyer, CA).

4198: ELFT2, cargo ship **M/V Rep**
wo VCS in CW at 0353 (McDonald, BC)

4256: KLC, Galveston, TX clg CQ i
(Wright, TX).

4431.9: USN tracking net w/stas AF
alternate), D, M. L, K, H, & C. Excha
& ranges on targets, some of whi
targets. Much coordination re whi
tracking what. At least 1 sta referre
Alligator." Net used for 4F raid #'s. U
(Sabo, CA).

4640: YL/EE sending 3/2F in
(Kneitel, NY).

4996: RWM, Moscow, USSR in M
w/pips (Ross, ONT).

5048: 312M, un-ID sta, in USB at
OM wkg D902 w/cryptic sounding tf
England).

5062.1: CMU967, Soviet Navrad, S
in CW at 0028 w/long series of
(Kneitel, NY).

5063.6: NRT, Yokota Monitor, Jap
Iwo Jima Loran sta in USB at 0925 (Sa

5361: BT9P, un-ID sta, in USB at
OM gives authenticator letter & recei
Believe this freq & 5048 kHz used i
w/large scale army maneuvers (Thomps

5535: Speedbird 182 wkg Speedbi
this company freq in USB at 0039
cricket scores (Margolis, IL).

5692: CG Air Sta, Houston, TX w
CG-5416, USB at 1751 (Wright, TX).

5696: Rescue 1494, an H-3F w/p
wkg NOH & NMN, USB 0515-0520 (Sab

5922: Beacon X in CW at 0049, b
faster than the usual sending rate for
went into tfc at 0100 (Kneitel, NY).

6206: A/c M7K in contact w/Echo
at 0815. Echo Control asked to relay v
Alfa Tango. Discussion between Ech
M7K as to unit F4K not correspondin
net ID at 2240. Much talk re tracks (K

6277.5: OM/SS clg Tres Ocho Ocho
at 0421-0426 (Margolis, IL).

6288: D9IK, Korean bulk carrier **M/V Sammi Crystal** wkg NMC in CW at 0616 (McDonald, BC).

6428.5: VHP, Royal Australian Navy, Canberra, Australia in CW at 0745 w/VVV marker (Margolis).

6632: Some guy really singing it up, sounded drunk. After he finished, a struck up a QSO with another sta. Everything in JJ, was USB at 0440 (Scalzo, PQ).

6667: YL & OM/EE w/fishing tfc re squids, USB at 0127 (Scalzo, PQ).

6675: YL/EE w/BBC accent repeating 35702 in AM-mode 2100-2110. At 2110 "Ready, Ready 62 62, then into 5F grps (Mason, England).

6710: YL/GG w/5F grps at 1300. At 1315 2 OM/EE in USB & hrd JWC asking Maggie 2 to QSY to Oscar 10 to avoid the #'s sta (Mason, England).

6716: Halifax Military tfc in USB at 0620 w/Sierra 4 Juliet Golf (Hallmeyer, CA).

6735: Canadian Forces or NORAD exercise net here (primary), also 6750, 8967 & poss 6710 w/rdo checks & talk of setting up battle staff coordination freq. Included Tuna Fish w/patches thru Trenton Military to Granville & Tenement, & Sidecar to El Dorado. All USB, 0520-0626. Poss related net w/Muleshoe to Reprimand on 6710 at 0437 (Sabo).

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11300: 5ST, Tananarive Aeradio, Madagascar in USB at 21187 wkg Khartoum. Also 6OM, Mogadishu Aeradio, Somalia at 2103 wkg Nairobi (O'Connor)

11318: Syktyvkar, USSR w/Volmet wx bc in USB, YL/RR at 1405 (Mueller, Switzerland).

11387: Sidney, Australia w/Volmet wx bc, USB at 0800 (Mueller, Switzerland).

12202: RCV, Moscow Navrad, USSR in CW at 0228 w/RR tfc & clg EYNI (Kneitel, NY).

12357: OM/EE using callsign NUSC clg WOO. Indicated NUSC located at Long Beach, CA, USB at 2045. Can't find NUSC in USN or USCG lists, so may be a new ship. Any info? (Hall, CA).

12429: A busy day here on USB at 2320: KHY, Marina del Rey YC wkg WZX6442, yacht **Margi Mar** off Avalon; KST, Tacoma, WA wkg KCTF, **Sealand Endurance,** KTTZ, **Sealand Kodiak,** & KGJX, **Sealand Anchorage** w/daily reports. Then KRJG, **M/V President Eisenhower** wkg the sparks at KRJE, **M/V President Roosevelt** re comms skeds. At 1911, KY1593, Seattle wkg several un-ID ships re oil spill. Finally KY1593 sent RR tfc to skipoper of Soviet vessel **Vladivostok** (Hall, CA).

12625: 3EDU3, **M/V Ocean Fame** trying to send telegram thru VAI, but jammed several times & had to QSY (Hall, WA).

12703.6: PKD, Surabaja, Indonesia clg CQ in CW at 1138 (Ross, ONT).

12895: UNM2, Klaipeda R., Lithuanian SSR w/CW marker at 0255 (Kneitel, NY).

12969: XSV, Tianjin, PRC clg CQ in CW at 1149 (Ross, ONT).

13011: AQP, Karachi, Pakistan in CW. PFC QSL back in 4 weeks + personal letter from Lt. Cmdr in Pakistani Navy (Ross, ONT).

13037: KLC, Galveston, TX clg CQ in CW at 1817 (Wright, TX).

13046.5: PZN, Paramaribo, Surinam clg CQ in CW at 0005 (Wright, TX).

13059.8: 7OA, Aden, S. Yemen, in CW at 1300 w/70A (instead of correct 7OA) marker (Bledsoe, GA).

13201: MAC 50254 in USB at 2129 being called by McClellan AFB & asking for ans on any of their published freqs, but no response (Kammler, CA).

13231: CF Lahr, FRG w/wx bc, USB at 1416 (Mueller, Switzerland).

13273: Honolulu in USB at 0108 to various a/c including Navy Sierra Tango 442 (Hallmeyer, CA).

13282: Tokyo Radio w/Volmet bc, USB at 0440. YL's voice sounded synthesized (Hallmeyer, CA).

13646: Beacon P in CW at 0015 (Kneitel, NY).

13920: YL repeating Charlie India Oscar 7 Delta at 0050. At 0218 xmsn stopped in diff YL voice repeated only 3 times: Mike India Whiskey 2. Then orig YL returned w/Charlie India Oscar 2 (Williams, CO). This is Israeli Intelligence (Mossad)-- Ed.

13974: NNN0ICE, USN MARS sta McMurdo Sound, Antarctica in USB at 2358 wkg NNN0ABQ (Symington, OH).

13977.3: Moscow PTT in USB at 1102. YL/EE w/voice mirror test (Thompson, England).

14441.5: NNN0CBQ, USN MARS abd **USS Simpson (FFG-56),** NNN0CYM abd **USS Jack Williams (FFG-24)** clg any stateside MARS sta at 2230. At 2025 monitored NNN0CMI USN MARS abd **USS Robert G. Bradley, FFG-49)** being used from one of that ship's 2 SH-2 helos. ID's as "Airborne Unit" & attempts to raise any stateside MARS sta. Got replies from NNN0TSD (CA) & NNN0QGR (RI) (Gordon, CT).

14462: RIP, un-ID CW sta at 1245 w/hand sent VVV & asking QSY 19305 kHz. At 1252 on 14462 kHz went into 487/50R RTTY w/5F tfc (Kneitel)

14477: NNN0CAC, **USS Mobile Bay (CG-53)** at 2300 w/patches from Gitmo via NNN0NIG (Gordon)

16090: AFA3, Andrews AFB, MD w/patch to McChord for a/c 200 (SAM 200?), USB at 1644 (J.M., KY).

26481.7: UDUC, Soviet **Svera Lebedeva** in USB at 0924 wkg SAG w/patch to USSR. Unusual since could have easily contacted numerous USSR coastal stas (Thompson, England).

16760: 9VHF, ship **Ocean Traveller** in CW at 1814 wkg DAN (O'Connor, NH).

16768: 3FBY2, Japanese vessel **Crystal Queen** wkg JPO2 w/telegrams (Hall, WA). Time?-- Ed.

16818: DUMM, Philippine bulk carrier **M/V Southern Wealth** to NMC in CW at 2343 (McDonald).

16883: JOU, Nagasaki, Japan clg CQ in CW at 0704 (Hallmeyer, CA).

16912.3: SUH, Alexandria, Egypt clg CQ in CW at 1401 (Bledsoe, CA).

17141: UFN, Novorossiysk, USSR at 1830 in CW clg 4KN (Kneitel, NY).

17385: CLP1, MFA Havana, Cuba w/CW msg at 1442 after RTTY ops (J.M., KY).

17413.5: KKN39, supposedly Dept. of State, supposedly Washington, DC, w/CW marker at 1318. Many still claim it's CIA, and now transmitting from a site in Florida (Kneitel, NY).

17940: A/c KLM-688 to KLM Airlines Base, Amsterdam, Holland re write up, USB 2120-2129 (Sabo, CA).

20147.5: 7RQ20, Algeria in CW at 1051 w/cable in FF congratulating diplomats on their "vitality" (Thompson, England).

20972: Canadian operation similar to MARS from Valcartier Mil Base, PQ w/patches, etc. for CF overseas. Calls noted indlude: CIW608, VEXV9, VET9. USB at 1600 (Scalzo, PQ). **PC**

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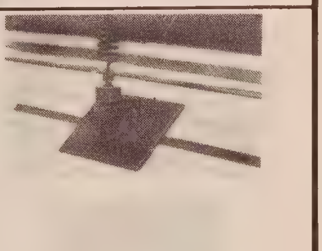

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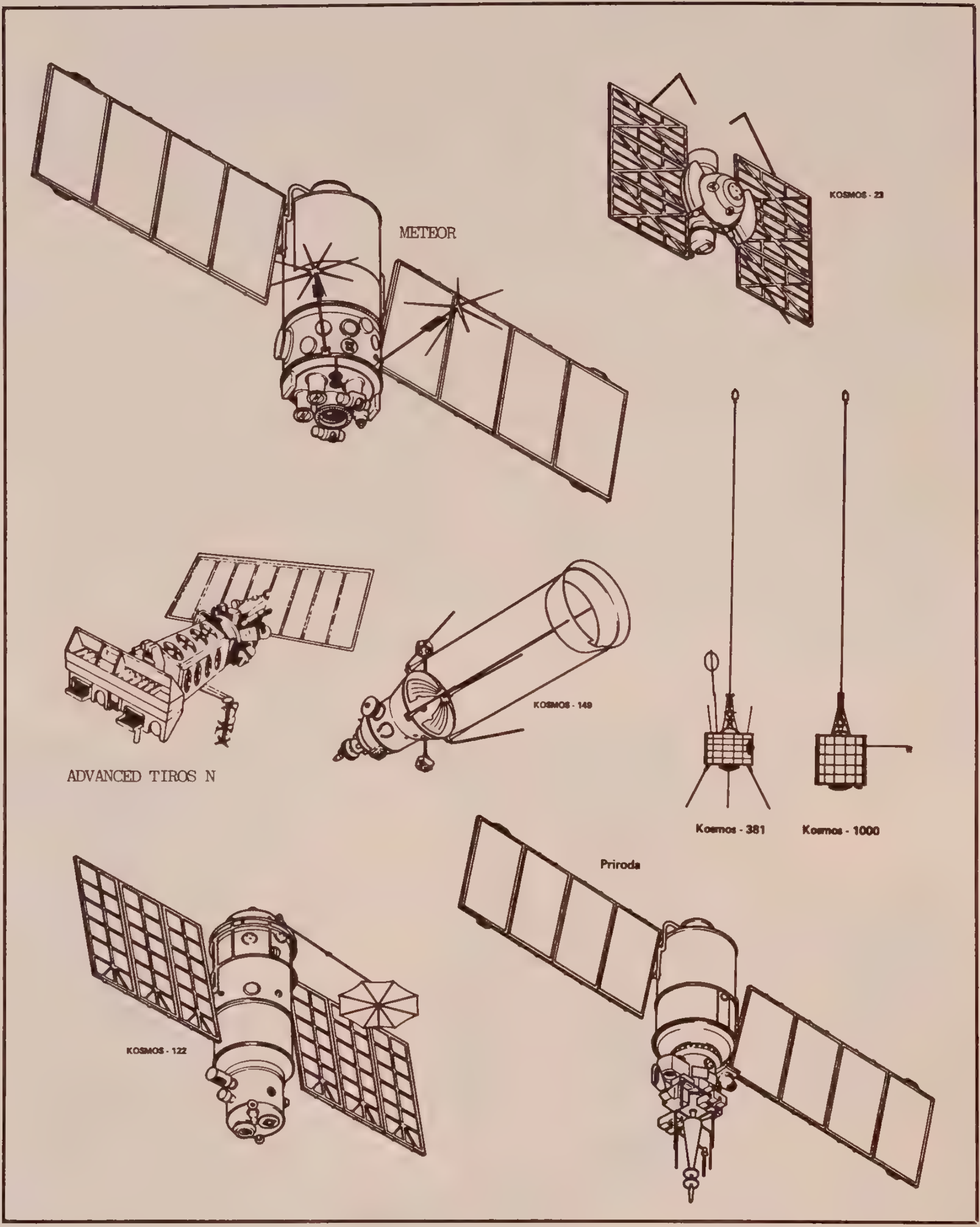
SATELLITE VIEW

BY DONALD E. DICKERSON

INSIDE THE WORLD OF SATELLITE COMMUNICATIONS

Lowband Satellites



Even though modern technology keeps pushing space communications into higher and higher frequency bands, the lowest band used for satellite communications is still quite active. What I call lowband generally runs from 135 to 175 MHz. Only Amateur Radio satellites use lower frequency bands. You will find a wide variety of spacecraft in this band. NASA's Goddard Space Flight Center tracks some 30 satellites which use these frequencies. They include weather, scientific and experimental and even manned spaceflights.

Not surprisingly, NASA was one of the first to occupy to lowband with the launch of their Advanced Technology Satellites (ATS). These geo-stationary satellites, of which their were three, were launched in the 1960's. Two are still operational. They carry experimental and one way communications for colleges and special study groups.

The most popular satellites in this band are the Advanced Tiros N weather satellites operated by NOAA. These satellites maintain an altitude of near 700 miles in a polar orbit. Unlike their geo-stationary counterparts, the GOES spacecraft transmit at 1.6 GHz, the Tiros transmits on 137 MHz. The most recent spacecraft launched in this series are NOAA 9 and NOAA 10. They transmit on 137.620 and 137.500 MHz, respectively. Both the US and USSR have several other polar orbiting weather satellites which transmit video data for weather pictures here. The transmissions are known as APT or Automated Picture Transmissions. Both NOAA 9 & 10 transmit APT in wideband FM with a deviation of plus or minus 20 kHz. This means that your receiver IF bandwidth must be 50 kHz. The video information is sent on a 2400 hz subcarrier in amplitude modulation.

To receive APT, you will want to use a dedicated receiver like the Vanguard weather receiver, or a professional quality receiver like the ICOM 7000 with an adjustable IF. A preamp will keep the noise level low and improve the quality of the pictures if you plan to display APT. The next piece of equipment you will need is a facsimile converter or demodulator and a printer to display the data. An AEA Pakratt 232 will display this video information on a video monitor if you have a IBM compatible PC or commodore computer. If you want weather maps without the complexity of a computer display you can get a FAX 1000 from DGM which will display the information on a printer. A Universal M-7000 will put the FAX on any video display monitor screen.

When setting up your weather station, keep in mind that the lowband weather satellites will be phased out in the next 10 years. To move to the geo-stationary satellites (GOES) you will simply need to add a converter (from 1.691 to 137 MHz), a preamp and you will want to get something more in the way of an antenna than a simple vertical.

Several geo-stationary satellites have beacons in the lowband. For example, ATS 3 transmits on 136.47 MHz. GOES 3 weather satellite uses 136.38 MHz and 137.19 MHz. The European weather satellite, Meteosat-1 uses 136.74 MHz.

Two of what I think are the most interesting frequencies on low band are used by the Soviet manned space program. The Salyut 7 space station (now unmanned) used 142.417 MHz for plain voice communications. The Mir, the Soviet's new space complex, uses 143.625 MHz. The signals are wideband FM. For the best copy, your scanner should have an adjustable IF bandwidth; not real important if you don't know Russian. Of course, this being a frequency for low priority traffic, it is where most of the American jokes were told. En-

Oceania Satellites

Satellite	Location	Frequency	Type
Intelsat VF8	180..E	3.94-3.95 GHz	TV
		11.2-11.4 GHz	TV
		1.53-1.54 GHz	maritime
		4.19-4.20 GHz	maritime
Ausat	160..E	12.25-12.75 GHz	TV
Gorizont 11	140..E	3.65-3.96 GHz	TV
Raduga (USSR)	128..E	3.42-3.92 GHz	TV
STW-1 (China)	125..E	4.0-4.2 GHz	TV
Ekran (USSR)	99..E	702-726 MHz	TV
Gorizont 8/10	90..E/80..E	3.65-3.95 GHz	TV
Intelsat VAF 12	60..E	3.70-4.19 GHz	TV
		10.95-11.69 GHz	TV
Gorizont 9	53..E	3.65-3.95 GHz	TV
		11.508-11.540 GHz	TV

glish is used from time to time so nothing will be lost in translation. Not knowing Russian does not take anything away from the excitement of your first intercept from a Soviet space station.

The Soviet's are beginning to deploy geostationary satellites which will keep their manned spacecraft in constant communications with the ground. These satellites known as ESDRN (Eastern Satellite Data Relay Network) are the equivalent of our own TDRS satellites. Most of the Soviets high priority traffic will of course go through these satellites. It is expected that the 142 MHz frequency will still be used for low priority traffic and as back up to the satellites. Besides they will still want an unencrypted channel for their American jokes!

Several Navigational satellite systems can be found between 149 and 150 MHz. The Russian Kosmos series of Navsat and the US Nova and Oscar Navsats are located here.

The Soyuz and Progress spacecraft also have TLM frequencies at 165 and 166 MHz.

And their are still many other spacecraft to be found in this band. And, as with any snooping into government frequencies and communication networks, it takes some time and luck to catch a new satellite or new channel. So keep your scanner running and let me know what you hear.

News & Notes

Peace: Brazil has announced it's plans to launch a satellite for Peace. BramSat (AMSAT of Brazil) calls the project Dove (Digital Orbiting Voice Encoder). Dove is an educational project which will teach students how to track satellites, observe propagation, decode TLM etc. The Satellite's mission is to promote the peaceful use of space. The Digital FM voice synthesizer will broadcast a continuous message for this purpose in three languages: Portuguese, English and Russian. It is scheduled for launch next year.

USSR: The Soviet's are busy launching satellites as usual. During the last 6 months they have launched a new Ekran and three Molniya TV satellites along with 4 Cosmos research satellites (Cosmos 1906 1908 1922 1923). The Cosmos spacecraft are testing radio and radio telemetry systems. The frequencies used are unknown. All of these spacecraft, with the exception of the Ekran, are in a polar or highly elliptical orbit.

PRC 22: The Peoples Repubic of China has launched a communications in March. This quasi synchronous spacecraft will be located at 78.5 E in the Clark Belt.

Japan: CS3A, a communications satellite, is Japan's latest entry. Located at 132 E, CS3A transmits on the following frequencies:

2276.9 MHz
3950.0
3820.0
4080.0
17825.0
17945.0
18065.0
18185.0
18305.0
18665.0
18785.0
18905.0
19025.0
19145.0
19450.0

Tony Christianto of West Kalimantan, Indonesia wrote to ask for a list (and locations) of TV and Telecommunication satellites operating in his part of the world. I hope the following list is helpful Tony. Each of these satellites targets your area, so they should be easily received.

A final note on the Soviet's. Radio Moscow reports that the Soviet Shuttle launch vehicle, Energia, will soon be tested again. It has also been noted that the USSR does not intend to use it for manned spaceflights until it has proven itself in unmanned flights. It is also reported that a least one more Kosmos module will be added to the Mir space station before years end. Four are planned. One will be an interlock which will facilitate EVA activity. It will give the Cosmonauts easier access to the spacecraft's exterior.

RS13/14 is still scheduled for launch this year (as first announced in the May 88 issue). TLM and frequency information has not yet been released. I will keep you informed of the latest developments. Your letters, comments and suggestions are always welcome. See you next month. PC

Low Band Satellites

135.605 MHz	ATS-3	137.400	Meteor/Kosmos 1602
136.110	ATS-2	137.500	NOAA 9
136.380	Goes 1/2/3	137.620	NOAA 10
136.450	OAO	137.850	Meteor 3
136.460	ATS-1	142.417	Salyut 7
136.500	ATS-2	142.625	Mir
136.740	IUE	149.950	Soviet Nav Sat
136.770	ITOS	149.988	US Mil Nav Sat
136.860	IUE	150.000	NNSS US Nav Sat
137.040	US Spy Sat	153.420	Kosmos Spy Sat
137.075	Meteor	153.480	Kosmos Spy Sat
137.130	Meteor 1-30	153.600	Kosmos Spy Sat
137.200	Metosat	165.000	Salyut TLM
137.305	Meteor 2-11	166.000	Soyuz TLM
137.350	AST-1		

BETTER SIGNALS

BY ED NOLL W3FQJ

ANTENNAS AND SIGNAL IMPROVING ACCESSORIES

Antenna Potpourri

The advent of automatic tuners, remotely-controlled tuners and improvements in the standard manually operated types has brought about a new ham interest in some of the older antenna types such as Zepp, double Zepp, extended double Zepp and Windom antenna, Fig. 1. Such antennas, with the use of open-wire 300- or 450-ohm line, provide multiband performance. The tuner sets up a standing wave on the line such as to match impedances at both ends. An open-wire line may have a high SWR but its balanced configuration and wire spacing result in little line radiation and loss. However on one or several bands there may be a high radio-frequency level present in the shack and some adjustment of overall length may be necessary. An alternative is to use a sheltered mount and a remotely-controlled tuner positioned a reasonable distance away from the radioroom. An appropriate short length of coaxial line connects between the

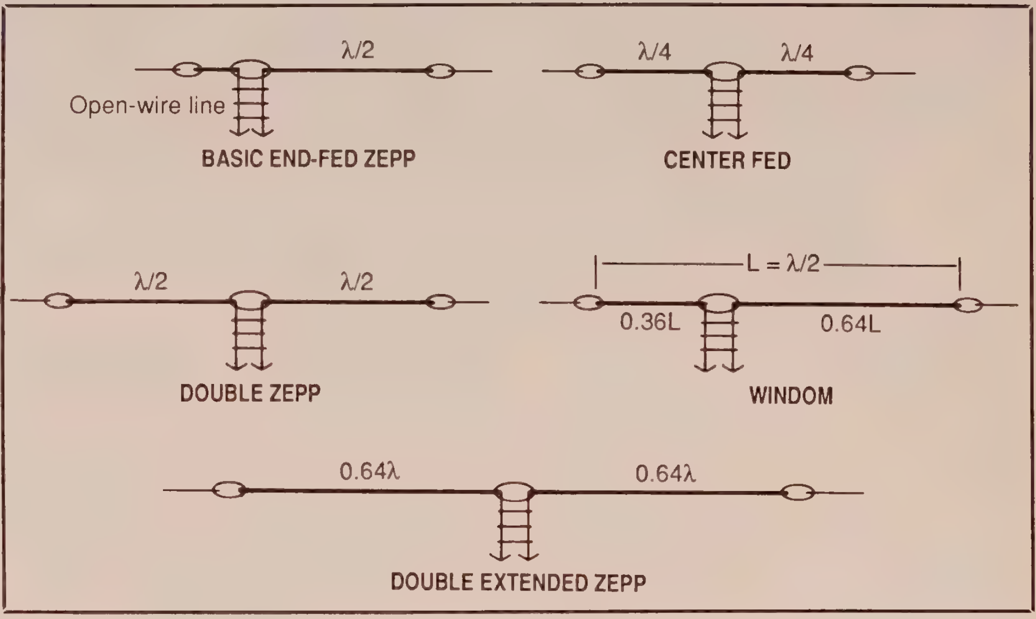


Fig. 1. Antennas for use with tuners.

Shortwave Broadcast Bands

Band	MHz	λ/2	λ/4	.36L	.64L	.64λ
120	2.4	195	97′6″	70′2″	124′9″	250′
90	3.3	141′10″	70′11″	51′1″	90′9″	181′10″
75	3.95	118′6″	59′3″	42′8″	75′10″	151′11″
60	4.9	95′6″	47′9″	34′5″	61′1″	122′5″
49	6	78′	39′	28′1″	49′11″	100′
41	7.2	65′	32′6″	23′5″	44′7″	83′4″
31	9.7	48′3″	24′1″	17′4″	30′10″	61′10″
25	11.8	39′8″	19′10″	14′3″	25′4″	50′11″
21	13.7	34′2″	17′1″	12′4″	21′10″	43′10″
19	15.3	30′7″	15′3″	11′	19′7″	39′3″
16	17.7	25′5″	13′3″	9′6″	16′11″	33′11″
13	21.6	21′8″	10′10″	7′10″	13′10″	27′9″
11	25.8	18′2″	9′1″	6′6″	11′7″	23′3″

Amateur Bands

160	1.85	253′	126′6″	91′1″	161′10″	324′3″
80	3.8	123′2″	61′7″	44′3″	78′9″	157′11″
40	7.2	65′	32′6″	23′5″	44′7″	83′4″
30	10.12	46′3″	23′1″	16′8″	29′7″	59′4″
20	14.24	32′10″	16′5″	11′10″	21′	42′4″
17	18.11	25′10″	12′11″	9′4″	16′6″	33′2″
15	21.3	22′	11′	7′11″	14′	28′2″
12	24.95	18′9″	9′4″	6′9″	12′	24′
10	28.5	16′5″	8′2″	5′11″	10′6″	21′1″

Table 1. Dimensions for various antennas to be fed with open-wire line.

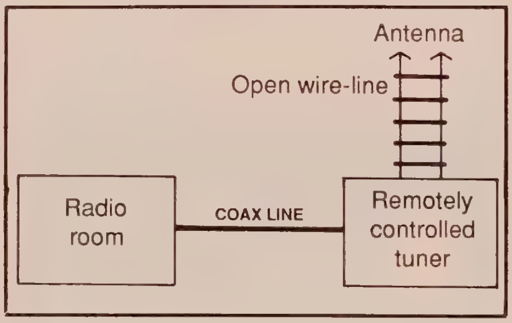


Fig. 2. Remote tuner keep R.F. from (????) for ham operation.

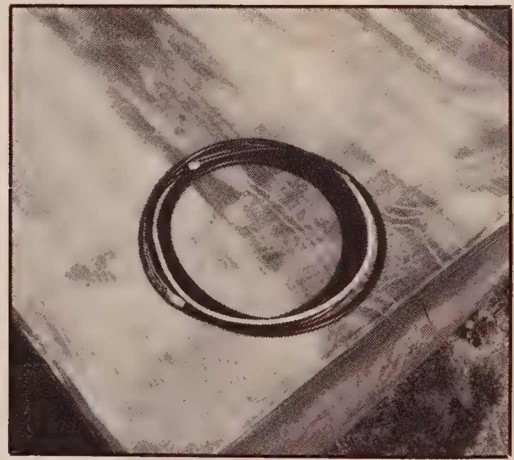


Fig. 3. Coaxial sleeve vertical ready to mount.

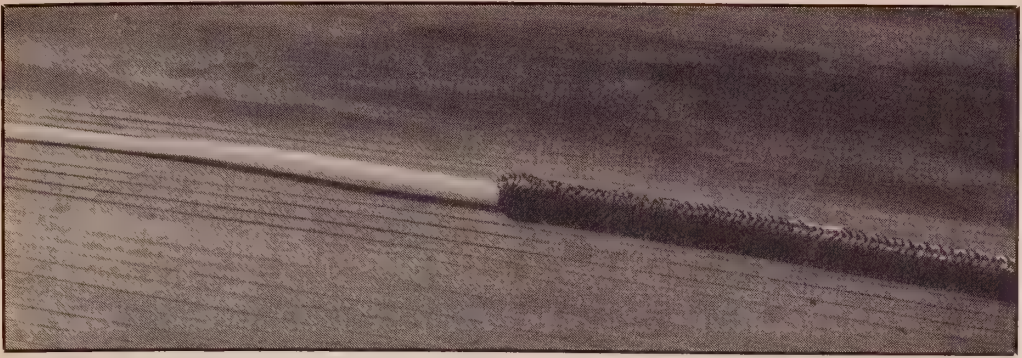


Fig. 4. Outer cover removed and braid loosened.

$\lambda/2$ Antenna Element = $\dfrac{468}{\text{Freq in MHz}}$ Feet

$\lambda/4$ Antenna Element = $\dfrac{234}{\text{Freq in MHz}}$ Feet

0.36L Antenna Element = $\dfrac{168.5}{\text{Freq in MHz}}$ Feet

0.64L Antenna Element = $\dfrac{299.5}{\text{Freq in MHz}}$ Feet

0.64λ Extended Element = $\dfrac{600}{\text{Freq in MHz}}$ Feet

Table 2. Basic equations used to determine important lengths and spacing.

tuner and the shack, Fig. 2. These same antennas can be used for reception on the SWB bands as well as on other portions of the shortwave spectrum.

The basic Zepp is an end-fed half-wave antenna. The one wire of the open-wire line is connected to the end of the antenna wire, while the other transmission line wire hangs free electrically but ensures the balance that reduces radiation from the transmission line. Sometimes this antenna was fed at the center like a dipole but, of course, is connected to open-wire transmission line instead of coax.

A double Zepp is really two half-wave wires connected in phase and fed at the center with open-wire line. This antenna is twice as long as the basic Zepp but has improved gain broadside to the wire. An additional gain is obtained by increasing leg lengths to 0.64 wavelength. This configuration is called an extended double Zepp.

Zepp antennas perform well on bands other than the one for which they are cut, especially on the even harmonic frequencies of the fundamental resonant frequency. However with a tuner they serve as good multi-band antennas. The Windom was often used with open-wire line and detailed information was given in previous columns. It was always a favorite antenna because of its more than one-band capability.

Table 1 supplies dimensions for the SWB and ham bands. You may wish to try one of these old time antennas along with your tuner. Basic equations are given in Table 2.

Scanner Portable Operation

MSgt. David O. Homelsine sent along a trick that all of you can use when you take your portable scanner on a camping site and you wish to do better than the results you obtain from a rubber duck antenna. It consists of a coax or sleeve vertical made from a 30′ length of coaxial cable, Fig. 3. David's instructions for cutting to 155 MHz band are as follows:

Measure 24″ from one end of the coaxial line. Carefully remove the outer plastic cover from this 24″ section of coax without damaging the braid. Loosen the braid by carefully pushing it down toward the plastic outer cover, Fig. 4.

Once it is loose enough it will slip over the plastic outer cover and you can pull it fully down over that cover. Do so carefully to pull it tight and then tape it to the outer cover. Do not cut the plastic cover to try to solder the outer braid to the inner braid.

From where the braid first begins to fold over the outer cover measure up 18″ and cut the wire. Do not strip the plastic from the center conductor. Rather attach a ring terminal to the tip of the plastic of the center conductor, Fig. 4. Attach a coax connector to the other end of the line.

Attach a small stone or weight to a 50′ piece of string or light rope. Toss this carefully over a handy tree limb. Allow the weight to slide over the branch and back to the ground. Remove the weight and tie the string to the ring terminal and haul away to stretch out your sleeve vertical and the remainder of the coaxial line that will run back to your scanner. **PC**

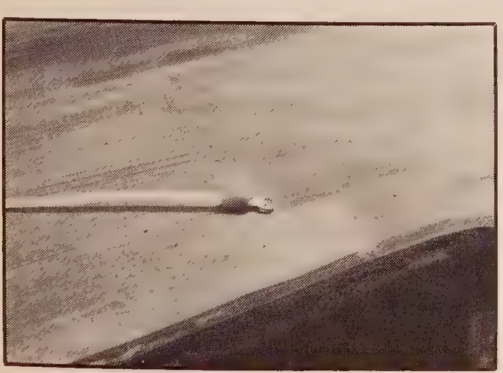


Fig. 5. Ring attached to end of plastic.

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CIRCLE 40 ON READER SERVICE CARD

WASHINGTON PULSE

FCC ACTIONS AFFECTING COMMUNICATIONS

Stores Fined For Selling Illegal Radio Transmitting Equipment

Eight stores in the Puget Sound area have each been issued a $2,000 Notice of Apparent Liability by the Federal Communications Commission's (FCC) Seattle Office for marketing illegal radio transmitter devices. Section 302(b) of the Communications Act of 1934, as amended, prohibits the marketing of devices that do not comply with FCC Rules and Regulations.

Seven of the stores were fined for selling external radio frequency power amplifiers, commonly known as "CB Linear" amplifiers. Section 2.815 of the Commission's Rules specifically prohibits the marketing of devices that do not comply with FCC Rules and Regulations.

Seven of the stores were fined for selling external radio frequency power amplifiers, commonly known as "CB Linear" amplifiers. Section 2.815 of the Commission's Rules specifically prohibits the manufacturing, importing or marketing of "CB Linear" amplifiers.

The eighth store was fined for selling a non-FCC type accepted radio transmitter capable of operting in, above and below the CB band frequencies. Section 2.803 of the FCC Rules prohibits the marketing of radio equipment subject to the Commission's equipment approved program prior to obtaining the appropriate FCC approved certificate. Section 95.409 of the Rules (CB Rule 9) subjects CB radio transmitters to FCC type acceptance. A transmitter capable of operating in, above and below the CB band is considered proscribed and will not be considered for type acceptance. The use of CB linear amplifiers has been identified in reported cases as the primary source of CB radio interference to TV and other home entertainment devices.

The names and locations of the eight stores are Allen Sound, Inc., Kent Trade City Stereo & CB, Tacoma; Computel Communications, Lynnwood; All Tronics, Marysville; Anderson's Trade City CB, Mount Vernon; Sundowner Communications, Oak Harbor; CB Tronics, Olympia and MM's CB & Sound Service, Centralia.

FCC Proposes Requiring Labeling Of Scanning Radio Receivers

The FCC proposed requiring labeling of radio communications receivers to advise users that it may be unlawful to intercept protected radio communications.

Regency Electronics asked the FCC to require advisory labeling to educate the public that certain uses of communication scanning receivers could be illegal in light of the passage of the Electronic Communications Privacy Act of 1986 (ECPA). The ECPA was enacted expressly to extend the protections of the Omnibus Crime Control and Safe Streets Act to radio communications. Prior to enactment of the ECPA, the degree to which the interception of radio communications was prohibited was unclear.

Although the ECPA prohibits interception of certain classes of communications, the frequencies on which these communications are transmitted can be used for unprotected communications as well. Therefore, the FCC said an advisory label would be the simplest and least burdensome way of alerting the public that some uses of scanning devices are prohibited.

A label would be required on all scanning radio receivers and manually tuned radio receivers intended for use by the general public. Excluded from this action are radio receivers which are marketed primarily for use in the licensed radio services and receivers used for the reception of broadcast transmissions, i.e., television, FM, AM receivers.

The Commission asked for comments on whether it should require both a label and accompanying instructive material describing more specifically the communications intended for protection under the ECPA. The labeling requirement would apply to equipment manufactured some number of months after the effective dates of this proceeding.

Amateur Service Reciprocal Operating Arrangements

The United States has arrangments to grant reciprocal operating permits (FCC Form 610-AL) to visiting alien amateur service licensees. A foreign national who will be in the United States for an extended period of time is encouraged to obtain an FCC amateur service license. Any person, except a representative of a foreign government, may apply for an FCC amateur service license upon passing the requisite qualifying examinations. No United States citizen, regardless of any other citizenship also held, is eligible for an FCC-issued reciprocal permit. An alien holding an FCC-issued amateur service license is not eligible for an FCC-issued reciprocal permit. When an alien obtains an FCC-issued license, it supersedes any FCC-issued reciprocal permit held.

An alien may apply for a permit to operate the alien's amateur station in areas where the amateur service is regulated by the FCC if the alien is a citizen of one of the following countries and also holds an amateur service license from that same country: Antigua and Barbuda, Argentina, Australia, Austria, The Bahamas, Barbados, Belgium, Belize, Bolivia, Botswana, Brazil, Canada (Canadian amateur service stations do not need a reciprocal operating permit while operating in the United States and vice versa), Chile, Colombia, Costa Rica, Cyprus, Denmark (including Greenland), Dominica, Dominican Republic, Ecuador, El Salvador, Fiji, Finland, France [including French Guiana, French Polynesia (Gambier, Marquesas, Society, and Tubuai Islands and Tuamotu Archipelago), Guadeloupe, Ile Amsterdam, Ile Saint-Paul, Iles Crozet, Iles Kerguelen, Martinique, New Caledonia, Reunion, Saint Pierre and Miquelon, and Wallis and Futuna Islands], Federal Republic of Germany, Greece, Grenada, Guatemala, Guyana, Haiti, Honduras, Hong Kong, Iceland, India, Indonesia, Republic of Ireland, Israel, Italy, Jamaica, Japan, Jordan, Kiribati, Kuwait, Liberia, Luxembourg, Monaco, Netherlands, Netherlands Antilles, New Zealand, Nicaragua, Norway, Panama, Paraguay, Peru, Philippines, Portugal, Seychelles, Sierra Leone, Solomon Islands, Republic of South Africa, Spain, St. lucia, St. Vincent and the Grenadines, Surinam, Sweden, Switzerland, Trinidad and Tobago, Tuvalu, United Kingdom (including Bermuda, British Virgin Islands, Cayman Islands, Falkland Islands, Gibraltar, Montserrat, Saint Helena and Turks and Caicos Islands), Uruguay, Venezuela and Yugoslavia.

An alien amateur licensee may apply for a permit by completing FCC Form 610-A, available from any FCC office or, in some cases, from United States missions abroad. The permit is valid for one year or until the expiration date on the alien's amateur service license, whichever comes first. The application and a photocopy of the alien's license must be sent to FCC, P.O. Box 1020, Gettysburg, PA 17326, U.S.A.

Amateur station transmissions in areas where the amateur service is regulated by the FCC must comply with Part 97 of the FCC's Rules and the International Telecommunication Union *Radio Regulations*. Operator privileges are those authorized by the alien permittee's own government, but do not exceed those of the FCC Amateur Extra Class operator.

The call sign transmitted in the station identification procedure is that issued by the licensing country, preceded by an appropriate letter-numeral designator, separated by the slant mark or by the word "stroke". (Canadian amateur stations must transmit the designator *after* its call sign.) At least once during each intercommunication, the alien amateur station must indicate in the English language the geographical location as nearly as possible by city and state, commonwealth or possession.

The station location letter-numeral designators are: Alabama - W4; Alaska - KL7; American Somas - KH8; Arizona - W7; Arkansas - W5; Baker Island - KH1; California - W6; Colorado - W0; Commonwealth of Northern Mariana Islands - KH0; Commonwealth of Puerto Rico - KP4; Connecticut - W1; Delaware - W3; Desecheo Island, PR - KP5; District of Columbia - W3; Florida - W4; Georgia - W4; Guam - KH2; Hawaii - KH6; Howland Island - KH1; Idaho - W7; Illinois - W9; Indiana - W9; Iowa - W0; Jarvis Island - KH5; Johnston Island, HI - KH7; Louisiana - W5; Maine - W1; Maryland - W3; Massachusetts - W1; Michigan - W8; Midway Island - KH4; Minnesota - W0; Mississippi - W5; Missouri - W0; Montana - W7; Navassa Island - KP1; Nebraska - W0, Nevada - W7; New Hampshire - W1; New Jersey - W2; New Mexico - W5; New York - W2; North Carolina - W4; North Dakota - W0; Ohio - W8; Oklahoma - W5; Oregon - W7; Palmyra Island - KH5; Peale Island - KH9; Pennsylvania - W3; Rhode Island - W1; South Carolina - W4; Dakota - W0; Tennessee - W4; Texas - W5; Utah - W7; Vermont - W1; Virgin Islands - KP2; Virginia - W4; Wake Island - KH9; Washington - W7; West Virginia - W8; Wilkes Island - KH9; Wisconsin - W9; Wyoming - W7.

FCC licensees wishing to apply for a reciprocal permit in a foreign country should contact the telecommunications regulatory authority for the country to be visited. The regulations of the host country apply.

Amateur Service International Radiocommunications

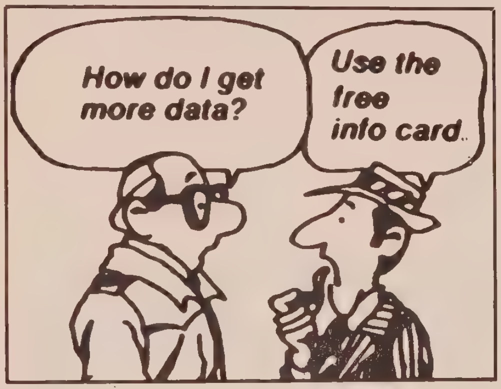
Types of messages: All radiocommunications between amateur stations of different countries, where permitted, must be in plain language and consist only of messages of a technical nature relating to tests and to remarks of a personal character for which, by reason of their unimportance, recourse to the public telecommunications service is not justified. The transmission of business messages is prohibited.

Banned countries: Radiocommunication is forbidden between amateur stations in the following countries and amateur stations in areas where the amateur service is regulated by the FCC because the administration of the country has notified the FCC that it objects to such radiocommunications: None.

Third-party arrangements: The United States has arrangments to permit amateur stations in areas where the amateur service is regulated by the FCC to exchange messages for third-parties with amateur stations in: Antigua and Barbuda, Argentina, Australia, Belize, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, The Gambia, Ghana, Grenada, Guatemala, Guyana, Haiti, Honduras, Israel, Jamaica, Jordan, Liberia, Mexico, Nicaragua, Panama, Paraguay, Peru, St. Christopher and Nevis, St. Lucia, St. Vincent and the Grenadines, Sierra Leone, Swaziland, Trinidad and Tobago, United Kingdom (special event stations with call sign prefix GB followed by a number other than 3), Uruguay, and Venezuela.

The United States also has arrangments with the United Nations to permit amateur stations in areas where the amateur service is regulated by the FCC to exchange messages for third-parties with amateur service stations 4U1ITU in Geneva, Switzerland and 4U1VIC in Vienna, Austria.

At the end of an exchange of international third-party traffic, an amateur service station in an area where the amateur service is regulated by the FCC must transmit the call sign of the foreign amateur service station in addition to its own call sign.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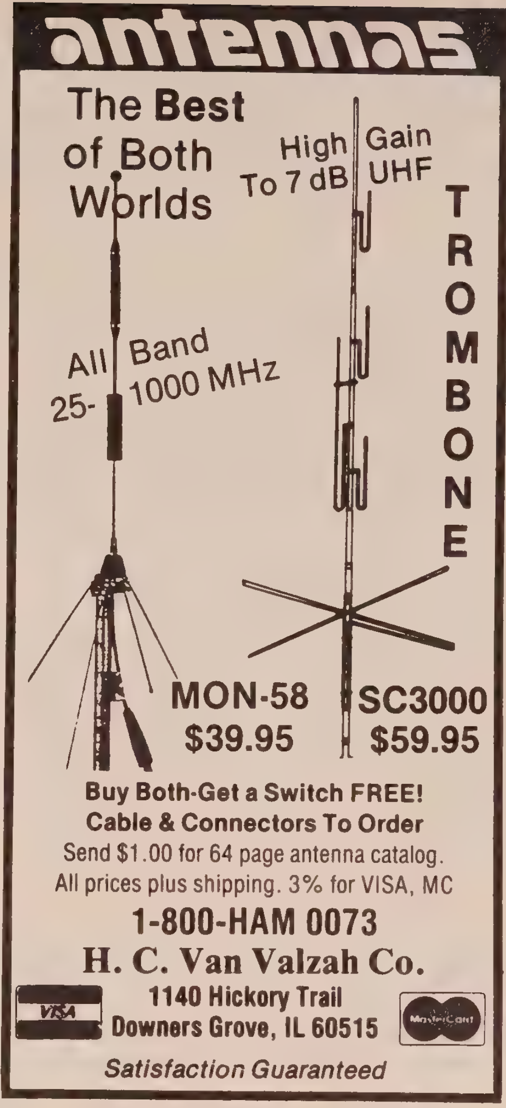
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CIRCLE 27 ON READER SERVICE CARD

CB SCENE

BY BILL SANDERS, SSB-295

27 MHz COMMUNICATIONS ACTIVITIES

What do you do when you want to install a CB rig in a mobile unit that is scarce on wide-open spaces. That was the problem I was facing when called upon to put a CB into a Ford Econoline van. Ford's design engineers managed to shoehorn in all of the hardware they required, but left little enough room for anything needed by the owner, such as a CB. This isn't at all an uncommon problem with many modern vehicles.

We scouted around for a smallish (and economical) AM-only mobile rig, selecting the Cobra 20-PLUS. This is a compact little rig offering electronic tuning with channel up/down buttons, LED function metering, instant CB Channel 9 selection, large LED channel readout, and a front panel mike connector. These are all features we liked, fit neatly into about a 4″ 1″ by 7″ metal box, and tagged at under $60. A honey of a rig, priced and sized for my purpose.

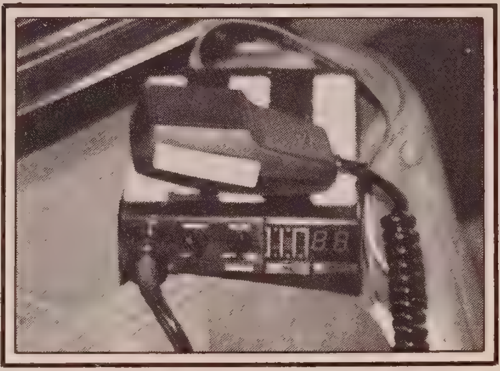
The Cobra 20-PLUS comes with a convenient mounting bracket, but no matter how hard I tried to find a suitable mounting location in the vehicle, none were convenient. In fact, there's little enough leg room in one of these vans, much less room for a CB rig, no matter how small it is.

While I was sitting there scratching my noggin trying to figure out where to install the mounting bracket, it occurred to me that there was a privacy curtain with this vehicle. When the vehicle is parked, the curtain covers the side windows and windshield by. It's held in place by Velcro discs on the overhead, and can be installed and removed with ease. That gave me the inspiration for the CB installation I wanted to do.

There was a nice, flat, vertical, vinyl-covered mounting surface on the part of the firewall that sticks out under the center of the dashboard. This seemed like the perfect spot. The rig was light enough to stay put with Velcro, and no holes would need to be made in anything. Moreover, Velcro would permit the CB rig to be pulled from the van at any time, then quickly stuck back in place when required.

Three strips (both "sides") of Velcro were placed on the top of the Cobra's cabinet, then the peel-off covering was removed from the side of the Velcro that needed to stick to the mounting location I'd selected. The rig seemed firm enough, and proved to be removable without pulling the Velcro off either the CB rig or the mounting location.

Going one step further, small pieces of Velcro were also used to make a no-holes mike holder. I put it right up on the top edge of the dash. The entire rig/mike mounting operation took only a few minutes once I decided upon a course of action. All that was left was the antenna and hooking up power to the rig. A cigar-lighter plug-in power connector could make this type of installation all the less complex, as would a mag mount antenna.



Cobra's 20-PLUS mobile rig is tiny and well designed.

This Velcro-installed CB rig has worked out just fine. It looks neat, is fast, requires no tools. I offer it as the seed of an idea for your own mobile installation in any type of vehicle where you're faced with mounting problems, and want to do it in a hurry, without holes.

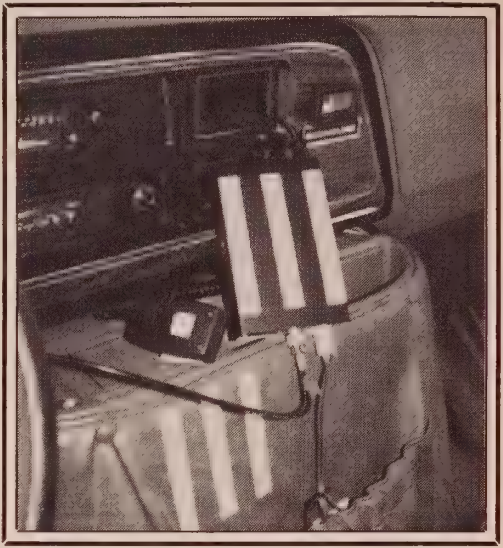
And, the Cobra 20-PLUS is a dandy little rig that does a fine job. We recommend that, too! It's small enough to store 'neath the seat when it's not needed.

Voice of Dissent

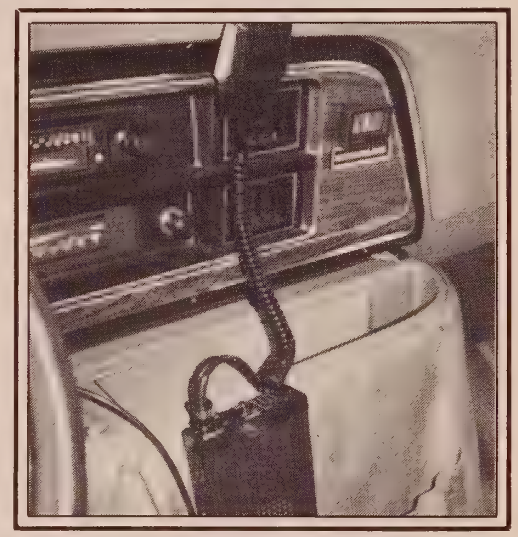
Kenny Lloyd, of Southbury, CT has written to express his extreme displeasure that this column doesn't cover "export" radios as well as illegal out-of-band two-way communictions. In the year this column has been running, his is only the second letter received asking for such coverage, although many readers have written to ask that this column steer clear of this type of info.

Aside from the fact that there seems very little interest in this material, I'm not inclined to suggest that my readers use equipment, or engage in operating practices, that would put them in jeopardy with the FCC. Maybe ten or fifteen years ago there might have been reasons to run lots of power on frequencies above CB Channel 40 (escaping from the "goodbuddies," chatting with other hobby-oriented ops, the crush of stations on the authorized channels, etc.).

These days, the FCC seems to tolerate most types of communications on the authorized channels. If you want to use higher power, talk to "real hobbyists," use a *slider* or VFO, and all of the other delights usually cited as justifying high powered gear or outbander frequencies, you can do it easily enough. For about a year now, a person has been able to easily obtain a renewable Novice Class ham ticket and legally do all of this between 28.300 MHz and 28.500 MHz, SSB. Many kids in the 5th and 6th grades pass the license test, so I'm unimpressed by those who claim that the test is a barrier.

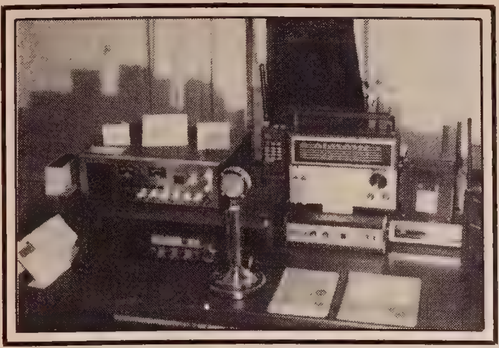


The Velcro strips shown in place on the rig and the mounting location. Note small Velcro patch used as mic hanger.



The Velcro-mounted CB installation shown completed.

These Novice Class ham privileges weren't available in the past. Today, it seems that the only reason a person could have to operate out-of-band would be for the primary purpose of getting a vicarious thrill out of doing something illegal, *because* it is illegal. I'm not interested in preaching "the right way" to anybody; how a person



R.C. Gerard's very professional-looking CB station in Madison, CT.

operates is strictly a matter for their own conscience. However, neither am I interested in going out of my way to tell people how to put themselves in harm's way with the FCC. Paying a "monetary forfeiture" of anywhere from $500 to $2,000 (or more) can't be easier (or more of a thrill) than getting a Novice ticket.

Readers who wish to offer comments, one way or the other, are welcome and invited to send along their thoughts. Please take pity on me and keep it as brief as possible, and no Gettysburg Addresses or sanctimonious hellfire and brimstone moral pronouncements if you expect me to read past your first sentence.

There seems to be sufficient interest in CB on authorized frequencies, using legal equipment, in order to keep this column adequately filled each month. I, for one, am not interested in participating in helping turn 27 Mhz into the type of chaotic, lawless, and totally useless shambles it was ten years ago. Are you? Let's hear from *you* on this. A postcard will do.

Incoming Mail

Bud, SSB-6523A, of AL is on the staff of the *Eleven Meter Times and Journal*. He writes to note that a few issues back down the line we questioned whether Royce was still in business. He confirms our suspicion that Royce is gone, but there's a rumor that they might return. For parts and manuals relating to older Royce rigs, Bud says to try New-Comm Electronics, 1805 Macon, North Kansas City, MO 64116. For Teaberry parts/manuals, try BC Electronics, 4403. Franklin Rd., Indianapolis, IN 46226. BC may also be able to supply parts for the old President rigs. We appreciate this most useful information. Thanks, Bud!

The letter carrier brought us a wide-ranging CB product catalog from National Electronic Sales, 2137 Oak Grove Road, Hattiesburg, MS 39401. Lots of antennas, CB rigs, power supplies, mikes, accessories, and so on. A catalog was also received from Scanner World, USA, 10 New Scotland Avenue, Albany, NY 12208; this is a catalog that's jam-packed with CB rigs, antennas, and accessories at exceptionally good prices. Scanner World, USA (in case you didn't already know) ships *very* fast.

R.C. Gerard, Madison, CT shares with us a photo of his fine looking station, known on the air as "203". This station features a classic Lafayette Telsat plus and Realistic Navajo rigs, a Realistic SW-60 receiver, as well as a Bearcat 50-XL scanner. Nice stuff, Bob. Thanks!

From Long Island City, NY we get a station photo from Michael Millazzo, also known as "878." This photo shows little Mike, Jr. guarding the station which includes a Cobra 148, a Super Star 3900, and an ETS Astatic Silver Eagle microphone.

We received a news release on an interesting-looking product that I'll share with you. This is for the Lunar Low Noise CB Receiver Preamplifier #PAI-27B. The device offers a 9dB nominal gain (10 dB typical) for received signals. The circuit uses a JFET amplifier for gain and low noise and has automatic RF-keying for transmitter bypass (keys with less than 1 watt). There's a built-in SSB delay. Runs from 12 VDC, or with an optional power pack. This is fully legal for CB and can also be used for 28 MHz ham. The product sells for about $70; if you interested you might wish to contact the manufacturer for additional specs and other relevant information.

The manufacturer is Lunar Industries, Inc., 9353 Activity Rd., Suite 1, San Diego, CA 92126.

Keep those cards, letters, comments, QSL's, and photos coming.

Mike Millazzo's good looking son shown in front of his pop's 27 MHz station in Long Island City, NY.

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By Bob Grove WA4PYQ

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CIRCLE 43 ON READER SERVICE CARD

ON THE LINE

BY JULIAN MACASSEY, N6ARE

NEW AND EXCITING TELEPHONE TECHNOLOGY

The British Telephones, You Ask

The U.S. has always had a "special relationship" with the British. What that relationship is can be hard to define. George Bernhard Shaw who was Irish noted that the "British and Americans are two nations separated by a common language." They are also in many ways separated by uncommon technologies. Their insistence on driving on the "wrong" side of the road is only a start. Telephones are certainly different over there. But telephones are different in every country. The laws of physics are the same, it is the philosophy that differs.

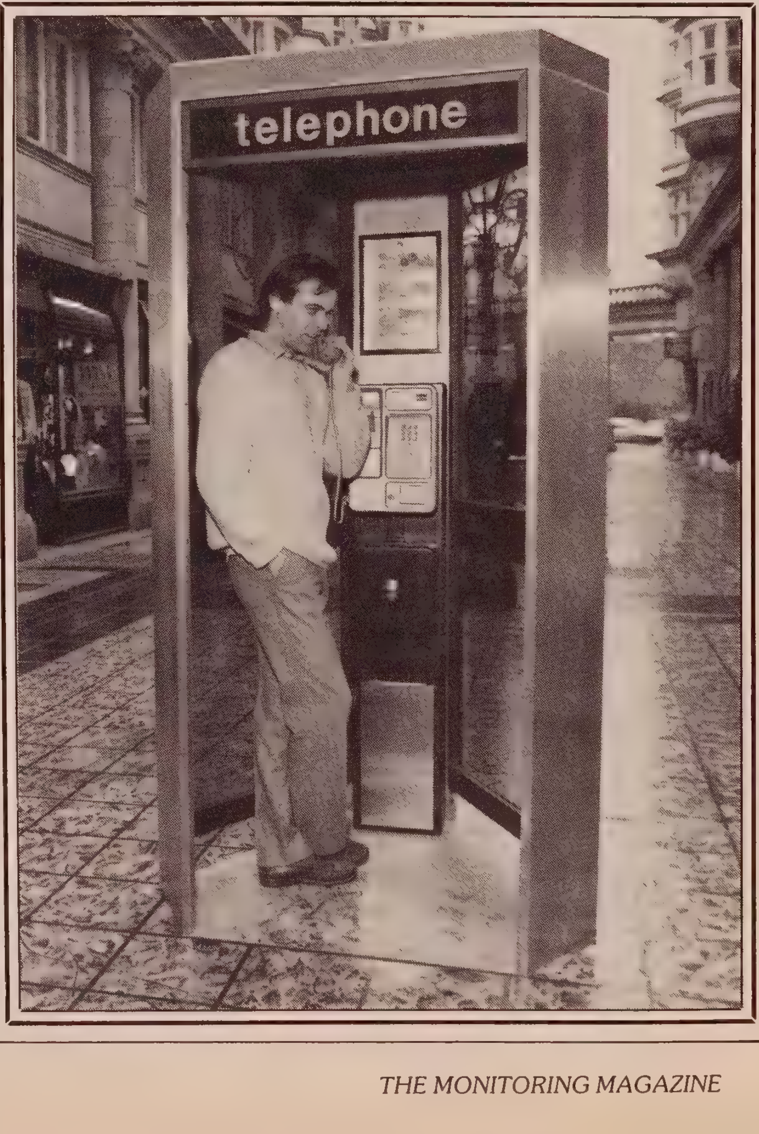
Tied into every national phone system is a large does of chauvinism and N.I.H. (Not Invented Here). This can be misinterpreted as protectionism, but isn't really. Most Telephone companies around the world sincerely believe that they have the best system for their country. Of all the European phone companies, British Telecom is the most progressive. For the past few years, they have been trying to adjust to being a private company. This is a look at British Telecom from an American perspective.

The heart and soul of any phone company is the exchanges, also called Central Offices or Switching Centers. Like the rest of the world, the British have been upgrading and installing Digital exchanges. The British digital exchange is called "System-X", it is made by a consortium of British Manufacturers. Also being installed is the Swedish L.M. Eriksen "AXE-10" which is a very successful switch sold all over the world. Besides the electronic digital exchanges, what is currently installed is either old Strowger (step-by-step) electro-mechanical exchanges or reed-relay exchanges. These reed-relay exchanges are one generation before the first electronic switches. Stromberg Carlson in the U.S. once made a similar exchange. The reed-relay switches are called TXE-4. The TXE-4 exchanges will be around for a while yet, they perform well and are fast.

The good news is that Touch-Tone is available on the TXE-4, AXE-10 and System-X exchanges. All these modern exchanges have six digit numbers, the old Strowger exchanges have four or five digit numbers. You have to call British Telecom to get it turned on, but it is available and is free. When talking to British Telecom, talk about "MF" (Multi-Frequency) as that is what they call Touch-Tone. The big problem with using Touch-Tone in Britain is find a Touch-Tone phone to plug into the line. Also available to British subscribers with digital exchanges is a range of custom calling services. These services are called "Star Services" by British Telecom and consist of the familiar Call Waiting, Three Way Calling, Call Forwarding and some others such as, Do Not Disturb and Blocking Outgoing Calls. There is a charge for the Custom Calling features.

In the field of fiber-optics, British Telecom research labs have had many important

One of the new style British phone booths.



The Harmony a Northern Telecom phone that is popular in Britain and the U.S.

breakthroughs, where they fall down is in installing the stuff. As the phone company gets better, the amount of use increases and that strains the installed equipment. It is not unusual in Britain to be unable to get a line out of your area. There is a massive lack of "inter-office" cable. Fiber-optics make this cheap and easy to install, but they need to increase capacity by a couple of hundred percent to improve matters.

Every phone subscriber in the U.S. assumes that the phone bill is itemized. In the rest of the world, and the U.K. is no exception, the phone bill is not itemized. It looks like an electricity bill, it tells you how many "units" you have used and how much you should pay. Disputing the bill can be a challenge. British Telecom is working on itemized bills, but it will be a few years before they are universal. The unit is assigned an arbitrary cost, say 10¢ and the amount of time that a unit occupies depends on the call. A local call may have a unit length of say 10 minutes and a long distance call may have a unit length of ten seconds. For every unit, a DC pulse is sent down the phone line—you may have heard this pulse when listening to foreign news reports that were honed in to the radio station. In the local exchange is a pulse counter, every month this counter is photographed and the digits added in the past month are billed. One good thing about this system is that you can also have a pulse counter installed by your phone so you can keep tabs on the calls going out. Yes, in Britain, the teen-age girls also spend hours giggling on the phone. There are no "Free local calls" in Britain, every call is charged by units.

Nostalgia buffs will be saddened to see that the old red phone booths have left the British streets. They are now in U.S. shopping malls or being used as shower stalls in Beverly Hills. The new phone booths are designed to be vandal proof and easier to clean. The new booths no longer smell of stale cigarettes and they don't have built in ash trays like the old red ones. There are now several types of public phones and two types of booth.

One of the booth type phones does not take coins, it takes a smart debit card called a PHONE CARD. This is a credit card sized card that when purchased holds a certain number of phone "units". To make a call, the card is slid in a slot and an LCD display shows how many units are left on the card. Dial a number and make a call, as the units are used, they are deleted from the card. You can buy PHONE CARD's at Post Offices and supermarkets. The purpose of the cards is two-fold: Now you can make long distance calls without carrying sacks of coins around and, it makes it impossible to rob the phone booth. Yes, vandalism and crime is major problem for British Telecom, not everyone loves the phone company.

Like the U.S., the phone system in Britain is now de-regulated. This means that you can own and install your own phones, modems, key systems, fax machines and answering machines. There is a standard British Telecom phone jack and approval system. All equipment that is approved for use on British Telecom lines has a green approval label on it, this is called "BABT" approved.

Should a British subscriber wish to use another long distance carrier than British Telecom, there is an alternative. Only one alternative, but a second choice none the less. The other long distance carrier is called Mercury, and is a subsidiary of Cable & Wireless, which also used to be a Government company. British phones don't have Equal Access yet,so you need a Touch-Tone phone, an account number and a pass word, which is how you accessed the U.S. discount carriers before Equal Access. The intercity trunks of Mercury are fiber-optic cables running along the rail lines. Just about every town in Britain has a railway station so theoretically, every town could have Mercury access. The British Government has promised that in future, other long distance carriers will be allowed to operate.

There is no doubt about it, telecommunications has changed dramatically in Britain. British Telecom is trying to catch up and provide the services expected of a private phone company. Compared to the level of service in the U.S. there is much lacking, but compared to any European phone company or the old General Post Office Telephones of old, there has been a world of welcome change.

RADIO WEST

SHORTWAVE RECEIVER MODIFICATIONS

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CIRCLE 20 ON READER SERVICE CARD

PIRATES DEN

BY EDWARD TEACH

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Many readers may already be aware of it, but in case you aren't, I'll relay the latest news about the British off-shore pirate, **Radio Caroline**. Their programming will no longer be aired on shortwave. Use of the 49 meter band transmitter has been turned over to a group calling itself **World Mission Radio**, according to Ary Boender of the Netherlands. Ary says that **World Mission Radio** is using the shortwave transmitter for at least 16 hours per day, and that some of the former religious programmers who made up the "Viewpoint" segment of the **Caroline** schedule, have now switched over to **WMR**. Apparently, the Caroline programming which ran on shortwave for several weeks, amounted to just test broadcasts and that a changeover of this nature was in the works all along.

The **World Mission Radio** programs are being heard by some of our North American listeners during our evening periods. The current frequency is 6215. There is nothing to report on the QSL front as of yet, but World Mission Radio's address is P.O. Box 3416, Corona, CA 91719. Prospects for replies certainly cannot be any worse than they were with Caroline. To my knowledge, Caroline's representatives did not reply to a single letter regarding reception of the shortwave tests!

Late word just reaching me indicates that a new pirate, **Radio Garbanzo**, has become active. At least one broadcast has taken place so far, on a weekend, using 7415 around 0400 UTC. According to the announcement over the air, reception reports can be directed to the maildrop in Hilo, Hawaii (that's Box 5074, zip 96720). I hope to have additional info on this one for you next month.

One pirate that is hardly new, is the **Voice of Tomorrow**. This station has been around quite awhile, but its brief periods of activity are followed by considerable lengths of silence. During the latter half of May, the **Voice of Tomorrow** was being noted again.

The **Voice of Tomorrow** is unusual in that it is not concerned with a music format, or creating funny skits. Its programming is blatantly racist and the radical political nature of its content almost makes it border on being a clandestine broadcaster. The station is easily recognizable through the use of its closing song, "Tomorrow Belongs to Me" as well as its wolf howling and drum interval signal. Their new broadcasts claim to from Baltimore and announce this address: P.O. Box 314, Clackamas, Oregon 97015. The station showed up around 2330 on 7410 on consecutive Saturdays, but its anyone's guess how active they will remain until it slips away again.

Another new pirate is **Death Valley Radio** which says it can be found on the "usual pirate frequencies" on weekend nights. If I have made the correct time conversion from their "after midnight PDT" that would mean activity anytime after 0700 UTC on the weekends. "Arrlow Power" of the station says they program quality music, humor, literature and historical radio programs. Because they air no foul language or heavy metal, coupled with their low power (70 watts), the station operators are hoping this will keep the "FCC spooks off our backs." "Power" says they believe there is a need for both quality and educational material, but notes, "getting a license is an unbelievable bureaucratic nightmare! It's hopeless."

The station hopes to set-up a maildrop as soon as possible. They say they will accept cassettes of quality programming from listeners (apparently for possible use on the air). They also expect an increase in power soon. I have not seen any reports of this one being heard, even from the west coast, so perhaps it is still very new.

Over the past several months, **Radio Clandestine** seems to have climbed to the top, not only as the most often reported pirate, but also the one airing the most well-liked programming. The first achievement is certainly helped by being on more regularly then most pirates. Two reporters have the station recently. Noel Hendrickson of New Berlin, WI heard them on from 0405-0420 UTC on 7415. Usual host R.F. Burns played songs from the Band, Steve Martin's "Dentist" and one by Sting. There were no addresses or other announcements given at close.

Steven J. Rogovich of Virginia Beach, Virginia caught Radio Clandestine at 0458 on 7373. Steven noted a "wildly obscene" take off of a commercial for an electric power company, emphasizing how they swindle the public, a mention of **Radio Clandestine** being the longest running pirate on the air, a talk by some women about nuclear weapons and a mention of "from a ship anchored off the coast…it's a beautiful night for radio.."Steven notes that this was his first pirate catch after weeks of monitoring the known pirate frequencies. It takes a lot of checking and sometimes luck to build up a log of pirate stations, Steven. Keep working at it.

Another long running pirate is **Secret Mountain Laboratory**, which Dave Bowman picked up in Austin, TX from 0620 sign on to 0655 on 7425. There were selections of western, caribbean and oldies music. A woman gave the station ID, and a man announced the Hilo, Hawaii maildrop for reception reports. Dave says the signal was good in Texas and the audio quality excellent. These folks also have one of the nicer pirate QSL's.

Some other stations to be on the watch for include **Pirate Radio USA** which claims a Washington,DC location and sometimes uses a female announcer . . . **WKUE** with "Big Beef" as the disc jockey and the infamous **WYMN** ID'ing as "Woman's radio for the the feminist world" and

carrying the theme into a format which allows only female artists.

Don't forget to send in your pirate radio information. I can always use your pirate loggings, copies of QSL's received from pirates, news clippings and such. Info from pirate operators is very welcome, too. Let this column know about your station, its format, future plans and so on. And remember, pictures of the station (and operators) are also sought. Your information is the fuel that helps drive this column, so join in as often as you can.

That'll do it for this time. See you next month and, keep scouting those frequencies! PC

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Weather facsimile (FAX) charts are broadcast almost continuously during the day and night by powerful transmitting stations throughout the United States.

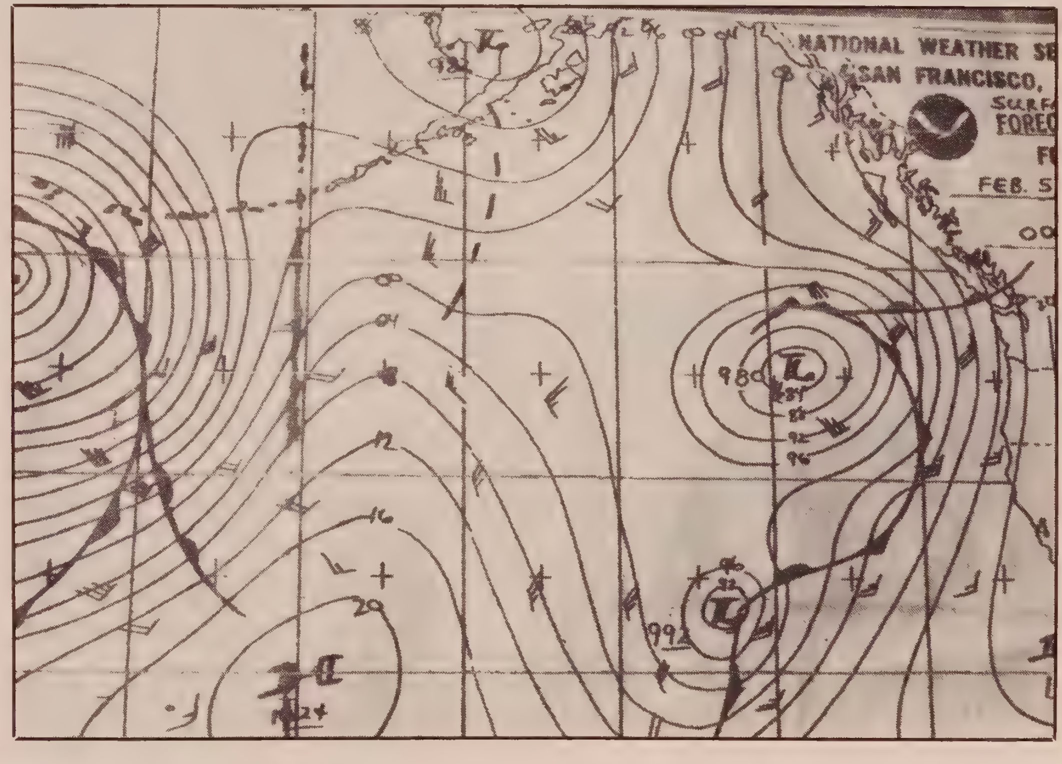
Some of the weather transmitting stations are on the air, 24 hours a day. Listen for their characteristic FAX signal that sounds like a sweeping tone, twice a second. Tune these stations in, upper sideband. Some stations are best received 1.9 kHz below their listed frequency.

No matter where you are in the United States, it's easy to pull in at least 3 or 4 of these powerful stations loud and clear. If you can hear them relatively clear, you may be assured of a crystal clear weather facsimile chart.

Some breakthroughs in digital computer technology may now allow you to receive weather facsimile pictures on your home IBM PC (TM) compatible computer WITHOUT ANY INTERFACE BOX! You read this right—everything is built into the disk program and the supplied interconnect cable!

One end of the cable plugs into your PC's COM port, and the cable is fitted with a miniature phone plug that plugs into any high frequency SSB receiver. The supplied floppy disk goes into the disk drive and contains

Station	**Frequencies**
Frobisher, Canada	3235 kHz, 7710 kHz, 15644 kHz
Halifax, Canada	4271 kHz, 6330 kHz, 10536 kHz, 13510 kHz
Boston, Massachusetts	3242.5 kHz, 7530 kHz
Boston, Massachusetts	3502 kHz, 12750 kHz
Norfolk, Virginia	3357 kHz, 8080 kHz, 10865 kHz, 16410 kHz, 20015 kHz
Lewes, Delaware	4223 kHz
Mobile, Alabama	6852 kHz, 9157.5 kHz, 11145 kHz
Esquimalt, British Columbia	4268 kHz, 6946 kHz, 12125 kHz
San Francisco, California	4346 kHz, 8682 kHz, 12730 kHz, 17151.2 kHz
La Jolla, California	8646.1 kHz, 17410.6 kHz
Honolulu, Hawaii	4855 kHz, 8494 kHz, 9369 kHz, 14826 kHz, 21837 kHz
Honolulu, Hawaii	9982.5 kHz, 11090 kHz, 16135 kHz, 23031.5 kHz
Kodiak, Alaska	4298 kHz, 8459 kHz



Weather Watcher
MOD. 45
MAP ADVANCE
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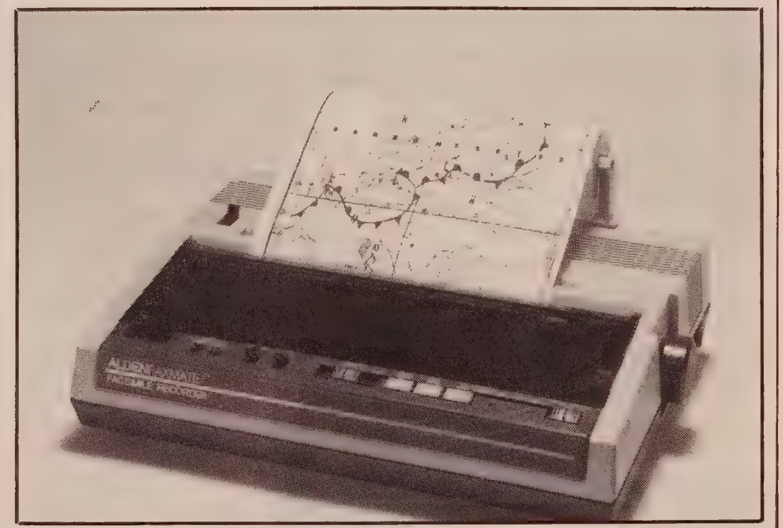


full instructions on how to turn your IBM PC/AT or compatible computer into a modern weather facsimile monitor and chart recorder.

The minimum system requirements to run the PC FAX programs are:

IBM PC compatible with 320K byte of memory
CGA graphics adapter
1 serial port (COM 1 or COM 2)
MS-DOS Version 2.1 or higher
Optional cassette player for demonstration tape & instructions

The best program around that I have personally reviewed is available for $79 from Software Systems Consulting, 1303 S. Ola Vista, San Clemente, California 92672. Add $5 for UPS shipping.

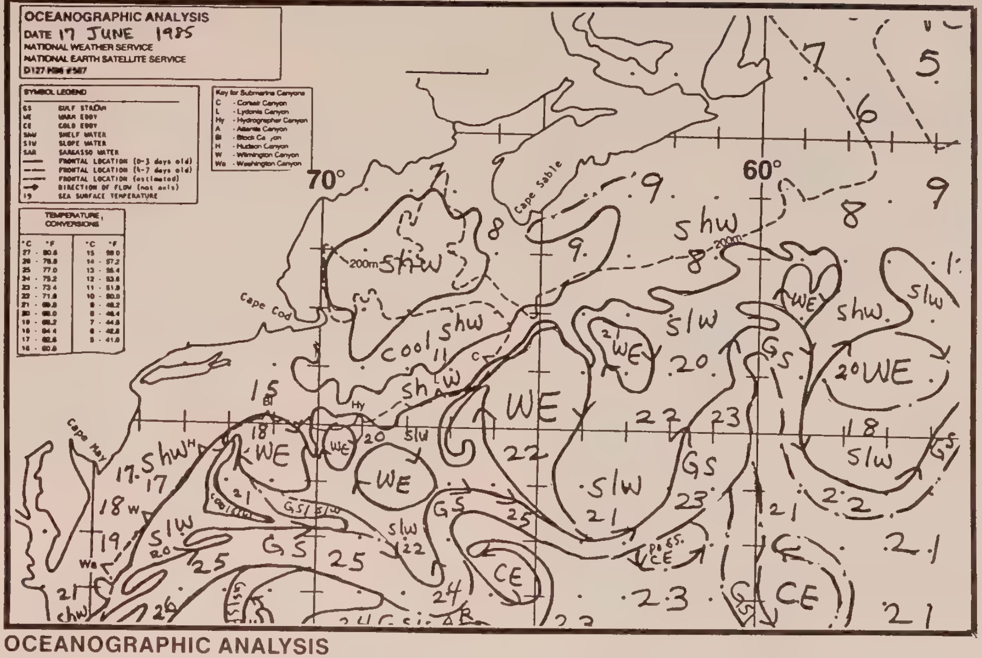
Simply tune into a weather facsimile transmission, turn on the computer and start the program, and in a few moments (usually less than 10 minutes) your computer will display a sparkling, detailed weather facsimile picture of all the weather conditions around you. Here are some of the charts that the National Weather Service presents:

Satellite photos
Surface weather analysis charts
Surface weather prognosis charts
Extended surface prognosis charts
Charts of ocean wave height
Charts of sea surface water temperature & thermoclines Iceberg information

The charts also include valuable information on wind direction and wind speed, weather fronts, and high and low pressure systems throughout the United States and our adjoining waters. One look at these charts and you will know the weather conditions around you and what you may expect over the next three days.

If you don't own an IBM PC, there are other devices to capture weather facsimile signals. If you own a less sophisticated computer, you might tie it into an AEA PK232 (Lynwood, Washington) communications interface. This device, tied into a printer, is all you need, for $300, to receive weather facsimile signals plus radio teletype and a host of other amateur radio digital modes.

If you don't have a computer or printer, you might look into the Alden (FAX Mate) (Westborough, Massachusetts), a compact weather facsimile recorder smart enough to receive the sounds of weather facsimile, and print them out on sparkling white chart paper. If your emergency communications set-up has unlimited funds, you may wish to invest in a complete weather facsimile station including SSB preprogrammable receiver, chart recorder, and built-in automatic weather facsimile converter system. These are available from the marine electronics industry from Furuno (San Francisco, California), Koden (Norwell, Massachusetts), Raytheon (Manchester, New Hampshire), and Alden.


OCEANOGRAPHIC ANALYSIS
DATE 17 JUNE 1985
NATIONAL WEATHER SERVICE
NATIONAL EARTH SATELLITE SERVICE
SYMBOL LEGEND
GS GULF STREAM
WE WARM EDDY
CE COLD EDDY
SHW SHELF WATER
SLW SLOPE WATER
SAR SARGASSO WATER
FRONTAL LOCATION (0-3 days old)
FRONTAL LOCATION (4-7 days old)
FRONTAL LOCATION (estimated)
DIRECTION OF FLOW (not axis)
19 SEA SURFACE TEMPERATURE
Key for Submarine Canyons
C - Corsair Canyon
L - Lydonia Canyon
Hy - Hydrographer Canyon
A - Atlantis Canyon
Bl - Block Canyon
H - Hudson Canyon
W - Wilmington Canyon
Wa - Washington Canyon
TEMPERATURE, CONVERSIONS
°C °F
70°
60°
Cape Cod
Cape Sable
Cape May
shw
slw
WE
GS
CE
cool
200m

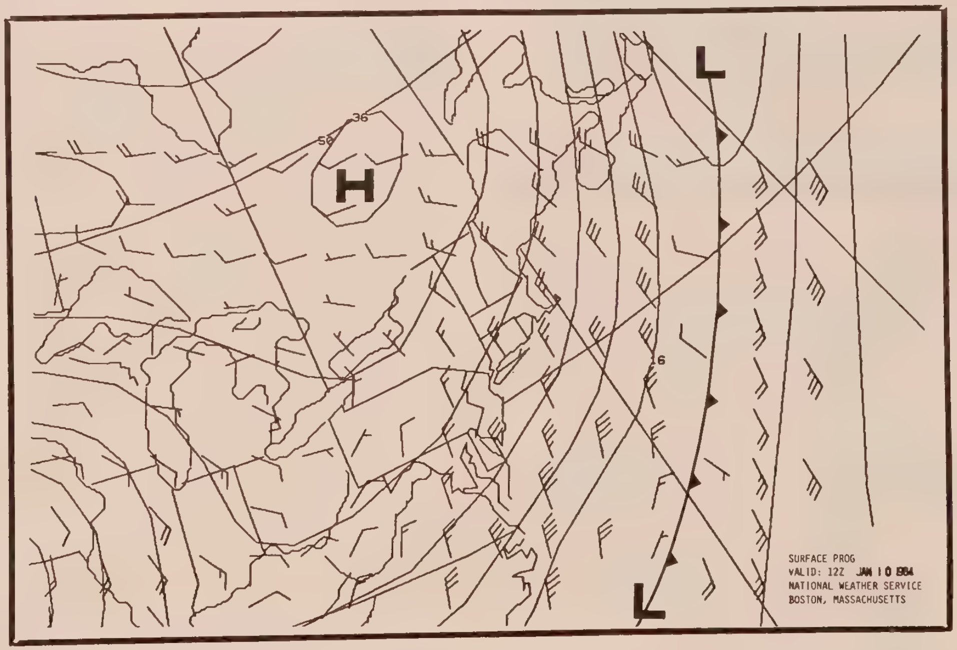
OCEANOGRAPHIC ANALYSIS
This chart is broadcast daily and provides fishing interests with Gulf Stream and sea surface temperature information.

Another way to go is to look at the exciting weather facsimile receivers, printers, and weather FAX station accessories available from Universal Shortwave Radio, Reynoldsberg, Ohio. This amateur radio and shortwave house offers you the latest in weather facsimile gear, including the impressive new M-7000.

I like the PC computer because it's the least expensive ($79) and I already have everything necessary to do the job, including computer, printer, and color video monitor for exciting 16-color satellite imagery photos. If you need a simple shortwave receiver capable of SSB reception, consider the portable Sony 2010 available for around $325. Just plug in the $79 computer program into your receiver, and away you go!

For your antenna, almost anything will work, providing its fed with coax cable away from your computerized weather facsimile station. Any antenna too close to the computer will pick up the noise generated by computers, and your picture will be snowy. Run some coax to an outside dipole or whip, about 16 feet long, and you'll get fantastic reception from the powerful weather facsimile transmitting stations.

You don't need to be overwhelmed by the technicalities of receiving weather facsimile signals. If you just want to plug in and have it all work, you have a wide range of programs available from $79 up to bring in weather facsimile pictures, just like the 5:00 o'clock news right into your emergency communications set-up. **PC**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CIRCLE 42 ON READER SERVICE CARD

Beaming In

(from page 5)

a large contour map showing signal levels for every nook and cranny for miles around his antenna site.

Still, I said that most area residents would receive mediocre reception because their receiving antennas were pointed away from his signals. He kept reassuring me that his omnidirectional antenna took this into account. He simply couldn't grasp the concept that optimum reception required the receiving antennas to be oriented towards his station, regardless of the design of his transmitting antenna.

In frustration, he decided to ring up the Washington consulting engineer who had prepared his signal contour map so that I could get it straight about his antenna. He managed to rouse the fellow from a sound sleep.

"I have a gentleman here who doesn't believe my antenna will put out a quality signal over a two county area," he advised. "Would you please tell him otherwise." With a knowing look, he handed me the phone.

Still sounding groggy, the engineer mumbled, "It will put a strong signal over two counties, OK?"

"But," I questioned, "if all of the receiving antennas are pointed in the other direction, won't that degrade picture quality?"

"Yeah, I guess everybody will have to put up new receiving antennas," was his response, with a tone that reflected annoyance that I should have bothered him with such a dumb question.

"Why doesn't Granik know this?"

"How do I know? All I was asked to do was prepare a signal contour map. He never asked me about receiving antennas." I suggested that now might be an opportune time to mention them, and gave the phone back to Granik.

Granik listened intently, several times trying to inject a mention of his omnidirectional antenna. I didn't get the impression that it caused the engineer to change his opinion. After several additional attempts at running the omnidirectional antenna bit up the flagpole, he withdrew with honor and slowly hung up the telephone.

By then, I realized that I shouldn't have volunteered my thoughts about picture quality. I should have just sat there quietly and savored being in the presence of this articulate, cultured, and very genteel man whose enthusiasm for this project had been unsullied until pigs ate his roses. I figured I'd done enough damage for one day and it was time for me to head back to the boondocks riding the same ill wind that had blown me into Granik's life. Although he was gracious enough to ask me to stay for another cup of coffee, it was quite apparent that he was preoccupied with other matters.

I let myself out. My last view of Granik was of him shuffling through a multitude of papers and multicolored reports; probably trying to find the correspondence from the people who told him about his omnidirectional antenna. I let go of my plans for that corner office with the windows.

The old Channel 67 building is now abandoned and overgrown. All of the station's present shop-at-home programming is imported from out-of-town. That office in the front should have been mine, by all rights.

Epilog

Some time later, I read that Granik had revised his antenna plans, deciding to erect a new tower that was taller than the one he had originally planned to use. The new tower was to be located at a spot he said would offer better viewing coverage, being ten miles to the west and about five miles north of the first site.

Then, some time after, I read that he was selling out his interests in the project. Under new owners, the station was to go on the air as WSNL-TV, Channel 67. Soon after, the local airwaves were filled with junk movies, rerun sitcoms, travelogs, old cartoons, and dreadful programs of local origin. After that, Channel 67 became a pay-TV outlet. Then it presented European rock music videos that were too awful to be shown on MTV. Most recently, Channel 67 seems to have finally found its true calling as an outlet for one of those 'round-the-clock nationwide TV shopping services. Between these format changes, of course, there were dismal periods of no operations at all.

Channel 67's present audience, eagerly pursuing porcelain dolls, bargain VCR's, discontinued computers, remote controlled toys, and cubic zirconias in gold plated settings, has no notion of how the pieces fell into place to put their favorite station on the air several years ago.

For my part, every time I drive past the station (located next to I-495), I recall my brunch with Theodore Granik and listening to his glowing description of that marvelous antenna that would overcome the vagaries of TV reception. I'm *still* sorry I opened my mouth that day.

I guess that sometimes it's better to say nothing and be thought the fool rather than speak up and prove you're one. I think Confucius said that, or *Poor Richard's Almanac*. Or was it Little Richard? PC

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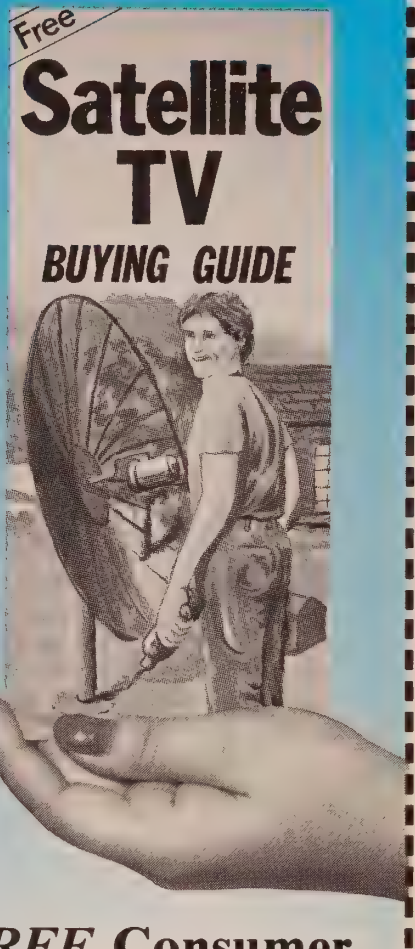

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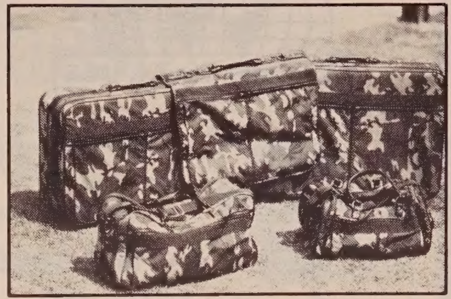

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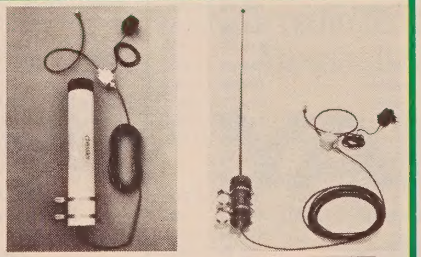

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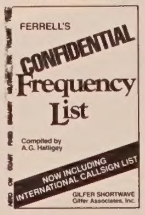
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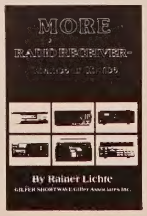

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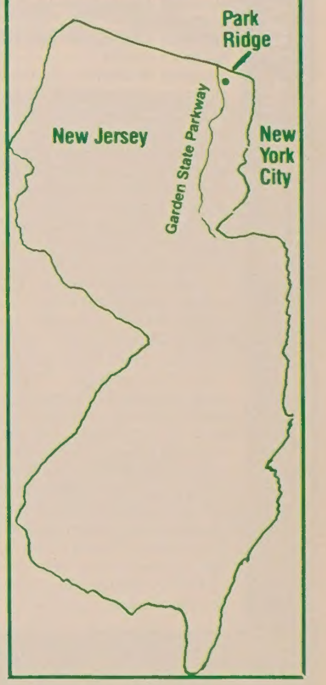

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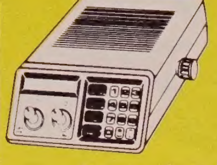

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30 CHANNELS—MOBILE/BASE

—SCANNER WORLD EXCLUSIVE—

Features include simple programming of the following frequency ranges: 30-50 MHz, 144-174 MHz, 440-512 MHz. Digital display, priority, search, lockout, delay, dim control, top mounted speaker, one year factory warranty. Includes AC & DC cords, mobile mounting bracket, telescopic antenna. All for only **$169.99** plus $7.00 shipping (optional extended warranty: 3 years $39.99; 2 years $29.99.) MX3000 Service Manual $5.00.

Regency®

Z60

60 Channel

Automatic Programmable Scanner

Includes Public Service and Aircraft Bands

Scanner World Special

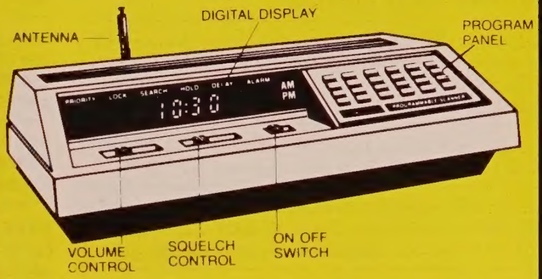
$139.99

(plus $7.00 shipping each)

Optional Accessories:

Cigarette Lighter Plug RGMPC . $4.95

Z Mobile Bracket — ***Special*** . . . $5.99



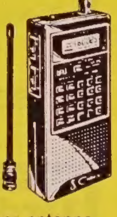
The Regency Z-60 is a compact, programmable 60 channel, multi band, FM monitor receiver for use at home or on the road. It is double conversion, super heterodyne used to receive the narrow band FM communications in the amateur, public safety and business bands: 30-50, 118-136, 144-174, and 440-512 MHz. *Size 10¾"Wx2-7/8"Hx8-3/8"D.

Sophisticated microprocess-controlled circuitry eliminates the need for crystals, instead, the frequency for each channel is programmed through the numbered keyboard similar to the one used on a telephone. A "beep" acknowledges contact each time a key is touched. The Z60 scans approximately 15 channels per second.

Any combination of channels can be scanned automatically, or the unit can be set on manual for continuous monitoring of any one channel. In addition, the search function locates unknown frequencies within a band.

Other features include scan delay, priority and a bright/dim switch to control the brightness of the 9-digit Vacuum-Fluorescent display. The Z60 can be operated on either 120VAC or 12 VDC. Includes one year warranty from Regency Electronics (optional 3 yr extended warranty only $39.99, gives you a total of 4 yrs complete warranty or 2 yr extended warranty only $29.99, gives you a total of 3 yrs complete warranty.)

Cobra® SR-15



$209.99 *($7.00 shipping)*

100 channel pocket sized hand-held scanner (6"Hx1"Dx2¾"W), no crystal, portable scanner, 29-54 MHz, 118-174MHz, 406-512 MHz, bank scanning, backlit LCD display, automatic search, lockout, scan delay, priority, key lock, plus much more. Includes rubber antenna, rechargeable Ni-Cad battery pack, AC adapter charger, earphone, and carry case. optional cigarette lighter adapter #15MPC $12.99.

BEARCAT 100-XLT Hand-held 100 Channel	**$219.99**	(7.00)
BEARCAT 70XLT Programmable Hand-Held	**169.99**	(6.00)
BEARCAT 55XLT Programmable Hand-Held	**119.99**	(5.00)
AD100U AC Adapter Charger for 50XL/55XLT	**12.95**	(*)
BP55 Ni-Cad Battery Pack for 50 XL	**13.99**	(*)
VC001 Carry Case for 50XL 55XLT	**11.99**	(7.00)
PS001 Cigarette Lighter Adapter for 50XL/100XL 100XL	**12.95**	(*)
BEARCAT 140 AC Programmable Scanner	**94.99**	(5.00)
BEARCAT 145XL AC Programmable Scanner	**104.99**	(5.00)
BEARCAT 175XL AC Digital Scanner	**159.99**	(5.00)
REGENCY TS-1 Turbo Scan AC/DC	**239.99**	(7.00)
REGENCY TS-2 Turbo Scan 800 AC/DC	**339.99**	(7.00)
BEARCAT 210 XLT AC/fDC Digital Scanner	**199.99**	(7.00)
BEARCAT 800 XLT AC DC Digital Scanner	**279.99**	(7.00)
REGENCY HX-1500 Hand-Held Scanner	**224.99**	(7.00)
REGENCY MA-257 Cigarette cord for HX1000 1200	**16.99**	(7.00)
REGENCY MA-917 Ni-cad Battery for HX1000/1200	**24.99**	(*)
REGENCY HX-CASE Hvy Leath. case for HX1000/1200	**19.99**	(*)
REGENCY MA-549 Drop in charger for HX1000/1200	**89.99**	(5.00)
REGENCY MX-3000 AC/DC Digital Scanner	**169.99**	(7.00)
REGENCY Z-30 AC/DC Digital Scanner	**129.99**	(5.50)
REGENCY Z-60 AC DC Digital Scanner w/Air	**139.99**	(7.00)
Mobile Mounting Bracket for Z Scanners	**5.99**	(*)
REGENCY RH-256B High Band Transceiver	**359.99**	(7.75)
REGENCY UC 102 Hi-VHF Hand Transceiver	**119.99**	(5.50)
REGENCY RH-600B High Band Transceiver	**429.99**	(7.75)
REGENCY R806 AC/DC Crystal Scanner	**79.99**	(5.00)
REGENCY INF-3 AC Informant Receiver	**249.99**	(7.00)
REGENCY INF—5 AC Informant Receiver	**199.99**	(7.00)
COBRA SR15 100 Channel Hand-Held	**209.99**	(7.00)
COBRA SR12 Digital Hand-Held Scanner	**189.99**	(6.50)
COBRA SR 10 Digital Hand-Held Scanner	**129.99**	(6.00)
COBRA SR900 AC/DC Digital Scanner	**104.99**	(5.00)
COBRA SR925 AC/DC Digital Scanner	**109.99**	(7.00)
Book "Top Secret Registry of Gov't Frequency" 6th	**14.99**	(3.00)
Book "Covert Intelligence, Electronic Eavesdropping"	**8.95**	(*)
Book "Betty Bearcat Frequency Directory"	**14.95**	(*)
Book "Rail Scan Directory"	**7.95**	(*)
Book "Air Scan Directory"	**12.95**	(*)
RCD MRP-1 Single Channel Hand-Held	**38.99**	(3.00)
FANON M8HLU DC Crystal Scanner	**89.99**	(5.00)
FANON PSK-1 AC Adapted for M8HLU	**12.99**	(*)
FOX BMP-1060 AC/DC Digital Scanner	**129.99**	(5.50)
FOX Mounting Bracket for BMP-1060	**9.99**	(*)
ANT—1 Magnet Mount Mobile Scanner Antenna	**29.99**	(3.00)
ANT—6 Base Scanner Antenna w/50' cable	**29.99**	(3.00)
REGENCY RD-ONE Radar Detector	**39.99**	(4.00)
REGENCY CB-ONE CB Radio	**34.99**	(5.00)

Bearcat

BC-600 XLT

$224.99 *($7.00 shipping)*

Digital Programmable 100 Channel Scanner

BC-600 XLT covers the following frequencies 29-54 MHz, 118-174 MHz 406-512 MHz. Features compact size of 6-5 16"Wx1-5 8"Hx7-3 8"D scan delay priority memory backup, channel lockout bank scanning key lock AC DC power cords telescopic antenna mounting bracket supplied, one year factory warranty, search, direct channel access, track tuning, service search including pre-programmed frequencies by pushing a single button for police fire emergency aircraft, weather, and marine services. Plus exclusive optional features never available on any scanner before. First is an RF receive amplifier for boosting weak signals for only $24.99 plus a CTCSS tone board is available for only $59.99 to make this the number one scanner available in the USA. Optional cigarette lighter plug #600MPC $4.99

BEARCAT BC-950XLT

Same features as BC-600XLT but also receives 800-954mhz.

$289.99 *($7.00 shipping)*

BEARCAT 70XLT

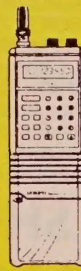
20 CHANNEL HAND-HELD SCANNER

Small size 6"Hx1"Dx2¾"W, full digital readout, priority, search, channel lockout, scan delay, key lock. Covers following frequencies: 29-54mhz, 136-174mhz, 406-512mhz. Package includes rubber antenna, rechargeable Ni-Cad battery pack, AC adapter/charger, and carry case.

SPECIAL PACKAGE DEAL **$169.99** ($6.00 shipping each)

SCANNER WORLD EXCLUSIVE

UNIDEN BEARCAT BC205XLT



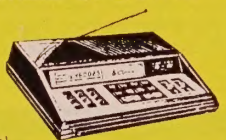
$289.99

(Plus $7.00 Shipping each)

Digital programmable 200 Channel hand held portable scanner with raised button keyboard for easy programming of the following frequency ranges: 29-54 MHz, 118-175 MHz, 406-512 MHz, 806-956 MHz. Features include Scan delay, memory backup, key pad lock, sidelit liquid crystal display, channel lockout, 10 twenty channel banks, direct channel access., automatic search, full one year factory warranty, 10 priority channels, NiCad battery pack, AC adapter/charger, flexible rubber antenna carry case are all included. Size is 2 11/16W × 1 3/8"DX7 1/2" high. (Optional extended 2 year warranty $59.99. 3 year extended warranty $79.99).

SCANNER WORLD SPECIAL

COBRA SR-925



$109.99

(plus $7.00 shipping each)

Digital programmable, 16 channel, AC/DC mobile/base, with raised button keyboard for easy programming of the following frequency ranges: 29-54mhz, 118-174mhz, 406-512mhz. Covering aircraft, marine, police, fire, weather, trains, public service, plus much more. Features include: digital display, priority, scan delay, weather button, channel lockout, search, scan speed, automatic squelch, memory backup, one year factory warranty, external speaker jack. . (Extended warranty 2 years extra $29.99, 3 years extra $39.99.)

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Call (518) 436-9606 to place orders by phone or mail orders to ***Scanner World,*** 10 New Scotland Av., Albany, NY 12208. Orders will be shipped same day received by United Parcel Service. ***Scanner World*** accepts VISA, MasterCard (COD shipments by United Parcel will be for cash or certified checks only). Mail orders with personal or business checks will be held 4 weeks for bank clearance. Orders with cashiers checks or money orders shipped same day received. Prices, specifications and terms subject to change without prior notice. If items are out of stock we will backorder and notify you of delivery date. All shipments are F.O.B. ***Scanner World*** warehouse in Albany, NY. We are not responsible for typographical errors. All merchandise carries full manufacturers warranty. Bid Proposals and Purchase orders accepted from Government agencies. Free full line catalogue available upon request. No minimum order. New York State Residents add 7% sales tax. Any claims must be made within 7 days of merchandise receipt.

SHIPPING CHARGES

(*) Add ($) per scanner, and $3.00* for all accessories ordered at same time. C.O.D. shipments will be charged an additional $3.50 per package. Full insurance is included in shipping charges. All orders are shipped by United Parcel Service. Shipping charges are for continental USA only. Outside of continental USA, ask for shipping charge per scanner.

Scanner World, USA®

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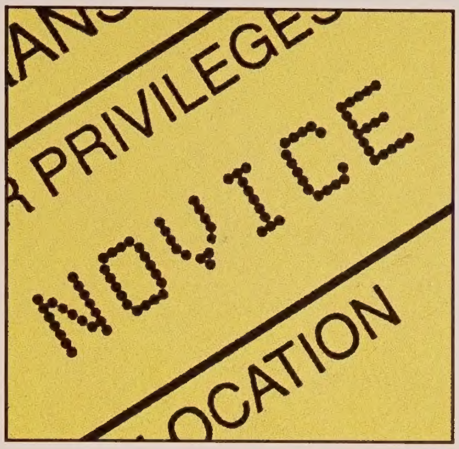
CIRCLE 138 ON READER SERVICE CARD

You've made a great start. Now, let Yaesu really get you going.



Finally. The 220-MHz, 1.2-GHz, and 10-meter phone bands are open to Novice operation.

And to work these bands, Yaesu's offering you a complete range of innovative HF, VHF, and UHF radios. Each with performance that Novices—and Extra Class operators, too—can really appreciate.

HT power perfected. There's a good reason you'll find the 220-MHz FT-109RH on more belts than any other. It simply out-classes the rest.

With a powerful five watts to get you out. A battery saver to keep you going. And a wealth of microprocessor-controlled features you'd expect only from a radio many times its size.

HT power in its smallest form. Finally, a miniature HT that you can really take seriously.

The FT-33R fits easily into your jacket pocket. But unlike the others, it features microprocessor control for quick, simple, and surprisingly intelligent operation.

And what other mini HT features five-watt output, a rugged aluminum-alloy case, and rain-resistant seals?

Two for the road. Our 220-MHz FT-311RM and 1.2-GHz FT-2311R are two of the most popular mobiles for two popular reasons.

One, they're built for performance. With slick microprocessor-controlled functions to get you around fast. And far.

And two, unlike most mobiles, they're built for simplicity. Because the last thing you need is a radio that interferes with your driving.

World-class operation. With our FT-757GX Mark II, you're ready to tackle the HF bands with all the full-featured performance an experienced operator demands.

Plus, when you upgrade to General Class, you won't have to upgrade your radio. Because with the FT-757GX Mark II, you've already started with the best. It's a great way to get maximum HF performance for your dollar.

Tune in to Yaesu. You've earned your ticket to the exciting world of amateur radio. Now, discover the exciting world of ham radio technology.

Yaesu's all the ticket you'll need.

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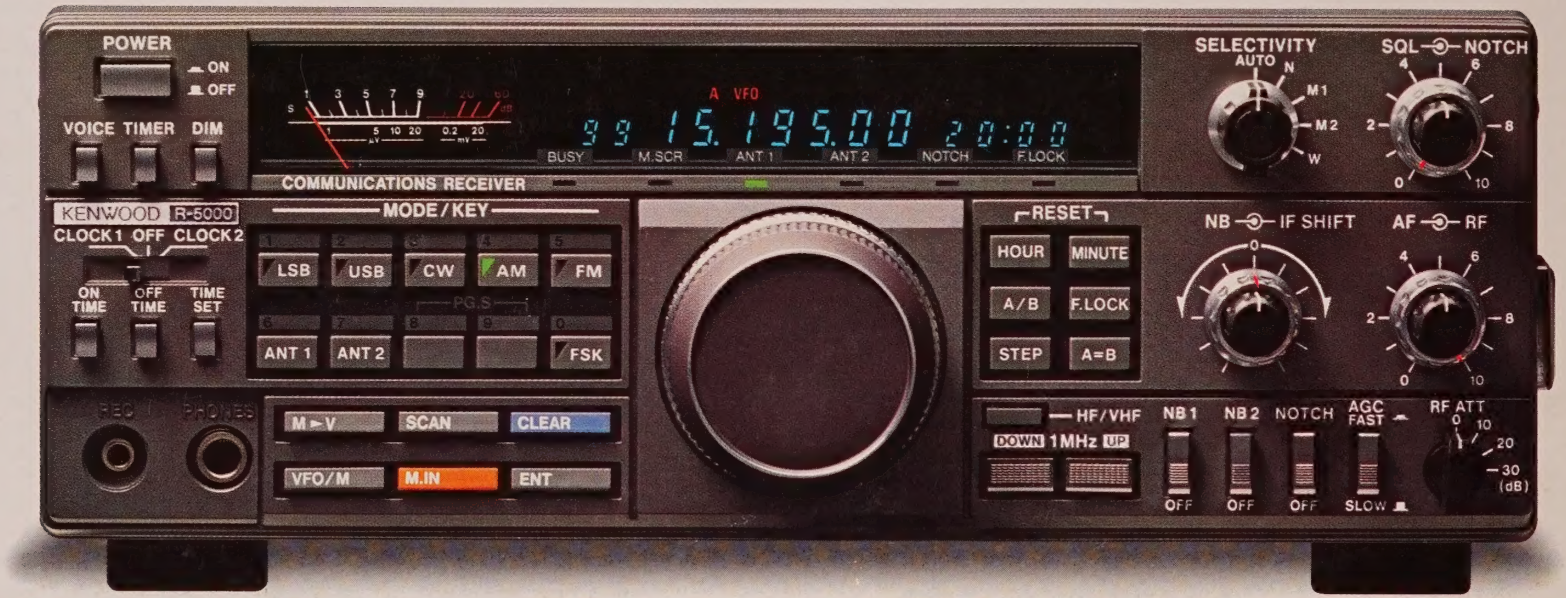

POWER
ON
OFF
VOICE TIMER DIM
COMMUNICATIONS RECEIVER
KENWOOD R-5000
CLOCK1 OFF CLOCK2
ON TIME
OFF TIME
TIME SET
A VFO
99 15.195.00 20:00
BUSY
M.SCR
ANT 1
ANT 2
NOTCH
F.LOCK
MODE/KEY
LSB
USB
CW
AM
FM
ANT 1
ANT 2
FSK
RESET
HOUR
MINUTE
A/B
F.LOCK
STEP
A=B
SELECTIVITY
AUTO
N
M1
M2
W
SQL NOTCH
NB IF SHIFT
AF RF
REC
PHONES
M►V
SCAN
CLEAR
VFO/M
M.IN
ENT
HF/VHF
DOWN 1MHz UP
NB 1
NB 2
NOTCH
AGC FAST
SLOW
RF ATT
OFF

R-5000

High performance receiver

THE **high performance receiver is here from the leader in communications technology—the Kenwood R-5000. This all-band, all mode receiver has superior interference reduction circuits, and has been designed with the highest performance standards in mind. Listen to foreign music, news, and commentary. Tune in local police, fire, aircraft, weather, and other public service channels with the VC-20 VHF converter. All this excitement and more is yours with a Kenwood R-5000 receiver!**

- **Covers 100 kHz-30 MHz in 30 bands, with additional coverage from 108-174 MHz (with VC-20 converter installed).**
- **Superior dynamic range.** Exclusive Kenwood DynaMix™ system ensures an honest 102 dB dynamic range. (14 MHz, 500 Hz bandwidth, 50 kHz spacing.)

- **100 memory channels.** Store mode, frequency, antenna selection.
- **Voice synthesizer option.**
- **Computer control option.**
- **Extremely stable, dual digital VFOs.** Accurate to ±10 ppm over a wide temperature range.
- **Kenwood's superb interference reduction.** Optional filters further enhance selectivity. Dual noise blankers built-in.
- **Direct keyboard frequency entry.**

- **Versatile programmable scanning, with center-stop tuning.**
- **Choice of either high or low impedance antenna connections.**
- **Kenwood non-volatile operating system.** Lithium battery backs up memories; all functions remain intact even after lithium cell expires.
- **Power supply built-in.** Optional DCK-2 allows DC operation.
- **Selectable AGC, RF attenuator, record and headphone jacks, dual 24-hour clocks with timer, muting terminals.**

Optional Accessories:

• VC-20 VHF converter for 108-174 MHz operation • YK-88A-1 6 kHz AM filter • YK-88S 2.4 kHz SSB filter • YK-88SN 1.8 kHz narrow SSB filter • YK-88C 500 Hz CW filter • YK-88CN 270 Hz narrow filter • DCK-2 DC power cable • HS-5, HS-6, HS-7 headphones • MB-430 mobile bracket • SP-430 external speaker • VS-1 voice synthesizer • IF-232C/IC-10 computer interface.

R-2000 150 kHz-30 MHz in 30 bands • All modes • Digital VFOs tune in 50 Hz, 500 Hz, or 5 kHz steps • 10 memory channels • Programmable scanning • Dual 24-hour digital clocks, with timer • 3 built-in IF filters (CW filter optional) • All mode squelch, noise blanker, RF attenuator, AGC switch, S meter • 100/120/220/240 VAC operation • Record, phone jacks • Muting terminals • VC-10 optional VHF converter (118-174 MHz)

More information on the R-5000 and R-2000 is available from Authorized Kenwood Dealers.

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